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# The BUILDER

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## ILLUSTRATED WEEKLY MAGAZINE,

FOR THE

## ARCHITECT, ENGINEER, ARCHÆOLOGIST, CONSTRUCTOR, SANITARY REFORMER, AND ART-LOVER.

CONDUCTED BY

GEORGE GODWIN, F.R.S., F.S.A.

"Every man's proper mansion-house, and home, being the theater of his hospitality, the seate of selfe-fruition, the comfortablest part of his own life, the noblest of his sonne's inheritance, a kinde of private princedome, nay, to the possessors thereof, an epitome of the whole world, may well deserve, by these attributes, according to the degree of the master, to be decently and delightfully adorned."

"Architecture can want no commendation, where there are noble men, or noble mindes."—SIR HENRY WOTTON.

"Our English word TO BUILD is the Anglo-Saxon Býlðan, to confirm, to establish, to make firm and sure and fast, to consolidate, to strengthen; and is applicable to all other things as well as to dwelling-places."—DIVERSIONS OF PURLEY.

"Art shows us man as he can by no other means be made known. Art gives us 'nobler loves and nobler cares,'—furnishing objects by the contemplation of which we are taught and exalted,—and so are ultimately led to seek beauty in its highest form, which is GOODNESS."

VOLUME FOR 1877.

OFFICE: No. 46, CATHERINE STREET, COVENT GARDEN, LONDON, W.C.

VOL. XXXV. No. 1770.—SATURDAY, JAN. 6, 1877.

# The Builder

## ILLUSTRATIONS.

Exterior of the Church of the Holy Angels, Hoar-cross: from the North-east ..... 14
Church of the Holy Angels, Hoar-cross, Staffordshire.—Messrs. Bodley & Garner, Architects ..... 15

## CONTENTS.

A Vision of New Year's Eve ..... 1
Church Building and Restoration ..... 3
London Bankers ..... 5
Unionism in the French Building Trades ..... 7
The Endowment of Scientific and Artistic Research ..... 7
Articles de Paris ..... 8
Movement in India ..... 8
How we Travel ..... 9
Exhibitors and Patentees at the Exhibition of 1873 ..... 9
Architectural Notes, by an Ignoramus: The Reign of the Pointed Arch ..... 10
The Churches of Wisby, Gotland ..... 10
The Manchester Corporation Sanitary Works ..... 11
Halifax Grammar School Competition ..... 11
New Pulpits ..... 12
New Barracks ..... 12
Church of the Holy Angels, Hoar Cross ..... 13
The Cottage Homes of England from a Social Point of View ..... 18
Time Conditions in Contracts ..... 18
Carriages in Asia ..... 18
"Engineering in India" ..... 18
The Colosseum ..... 19
Roofs ..... 19
Safety at the Royal Albert Hall ..... 19
Works of the late Mr. Lough ..... 19
Water Supply ..... 20
What Constitutes a "Sufficient" Supply of Water? Corrie v. Mayo ..... 20
Sketching without an Order ..... 20
Richmond Park and the Public ..... 20
A Dangerous Neighbour ..... 20
Obituary ..... 21
Archæological Societies ..... 21
Back Drainage v. Under-house Drainage ..... 21
Theatres ..... 21
Alleged Alteration of Specification ..... 21
Reclamation of Waste Lands ..... 21
The Glasgow City Churches ..... 22
"Bye-Commissions" ..... 22
An Architect's Claim: Parsire v. Argent ..... 22
Non-Performance of Contract: Gillingham v. Morton ..... 22
Breach of Convent: Jansson v. Bradbury ..... 23
"Bridge or Subway?" ..... 23
A Fire-Extinctor ..... 23
Schools of Art ..... 23
Accidents ..... 23
Railway Items ..... 23
Masters and Men ..... 24
Church Building News ..... 24
The Wet and the Wind ..... 25
Miscellanea ..... 25

## *A Vision of New Year's Eve.*

IT was not altogether upon professional topics that we mused as we sat before the fire on the evening of the last day of 1876. Before us was spread the *Times* of the day before, with its columns of contradictory news and telegrams with large-type headings, embodying (as it was bound to embody) the latest *canards* about the past, present, and future results of the deliberations of the Conference in the East, and its leaders with infallible receipts for keeping the world in order a little longer. Hardly a time to talk about architecture, we mused, at least with much chance of obtaining a hearing, when the thoughts of all public-spirited persons are turned towards the Bosphorus, and the game of chess between the "high contracting powers" there represented, where the chess-board is all Europe, and "check to your king" may mean the reversal of the policy of whole nations, or the fulfilment of prophecy by a kind of general "battle of Armageddon." Under such a disturbed state of things, with such great interests, whether directly affecting ourselves or not, hanging in the balance, could one really expect serious people to give much consideration to such comparatively limited interests as those involved in building must seem, just at this moment? Absorbed in these rather pessimist cogitations, as to our special field of labour, we gazed somewhat dreamily into the fire, which, taking, as fires will do, form and colour from our meditations, seemed to shape itself fitfully into a half-grotesque piece of architectural scenery,—amorphous temples piled upon still more amorphous rocks; spires and pinnacles, and gigantic buttresses, out of all proportion to anything they had to support. As we followed out, half amused, these vague semblances, fancies that seemed only partly of our own creating, gradually everything seemed to become absorbed in this visionary scenery, which, in some inexplicable way, increased in scale till it filled up the whole field of vision. Enormous rocks seemed piled on either side in the foreground, between which was visible, as through the proscenium opening of a theatre, a lane of hot, burning sand, flanked on either hand by rows of huge granite sphinxes, all carved on the same identical model. There they stood, one after another, colossal, silent, passionless in expression, as if placed there for all eternity. At the farther end of the vista stood two great truncated pyramids, covered, apparently, with all kinds of fantastic and mysterious carved and painted symbols, and finished with a curved-out cornice, whose shadow made an intense black line in the glaring sunlight; while between them an entrance-gateway allowed the eye to follow up a further vista, lined by rows of great painted columns, just discernible in a half-light thrown across them above, and giving access to yet farther recesses that were lost in gloom. An endless procession of priests, bearing symbols and strange animal-headed idols, moved in procession up the avenue towards the temple.

But as we gazed, a change came over the picture: the heated flat landscape gave way to a picturesque rocky scene under a bright blue sky, and on the rocks stood a group of temples in glistening white marble, the bright cool tone of which was the more emphasised by the delicately graduated colouring which formed the ground for the minutely-finished carving with which they were decorated. Sculptured figures, representing the very ideal of human grace and strength, adorned the structure, and carried on a mimic contest on its walls, or reclined in dignified ease in the angles of the pediments. A clatter of hoofs was heard, and a troop of handsome youths on horseback, their short tunics flying in the breeze, came bounding round the temple in procession, followed by equally beautiful women, whose long flowing drapery gave new and more delicate tones and lines to a scene which seemed the embodiment of healthy and beautiful human life, in its brightest and most joyous aspect.

But again the vision changed, and an immense pompous city was before us, crowded with buildings less refined in their beauty, certainly, than that we had just seen, but imposing for their extent and magnificence. They were not all temples, for some of the greatest of them seemed dedicated to secular and public uses; great aqueducts, too, carried high aloft on three or four tiers of arches, crossed the scene; and from an immense circular or elliptical building, decorated also with "arches on arches," came the shout of 80,000 people over some spectacle or show that pleased them. If our last vision showed the beauty, this certainly showed the pomp and prodigality of life, as illustrated in building. But the sights and sounds died away, to be succeeded by a strange, solemn, though to our ears uncouth, chant, which resounded in a building, the interior of which had now taken the place of the last brilliant and pompous scene. Everywhere great domed surfaces hung above the head, decorated with gold and mosaic that shone with a sombre splendour, from amid which there gazed down upon the spectator an array of stiff, solemn figures, embodying an intense religious feeling, which in some degree compensated for their lack of natural human beauty and freedom of action and expression. Scarcely had we arrived at this conclusion when the scene again mysteriously changed, and showed an interior in long perspective, without the gorgeous colouring of the last spectacle, but with a completeness of constructive design in pure masonic form, and a unity of conception in all its details, which impressed the judgment as even superior to that of the last interior, where the details seemed borrowed in more or less pure form from the types which had preceded it. Here, in this long arcaded interior, however, all seemed specially designed for its purpose; every part of the structure, from the base of the piers to the vaulted stone roof, which sprang from and overhung them, had a logical and inter-dependent connexion; but as we pleased ourselves with the contemplation of this completeness of architectural expression, and wondered what better could follow it, the spectacle seemed put to flight, the vast rocks which had formed the "front scene" in the panorama dwindled to their original dimensions, and the fire we had been gazing into was restored to its former aspect, at the sound of a voice from some one beside us, who said,—"Well, you seem to find some interest in

my dissolving views, in spite of what you said just now."

A little startled to find an unexpected visitor at our elbow, especially one who seemed to have heard thoughts which we certainly had not expressed aloud, we turned to see who the speaker could be, and were aware of a tall, elderly man, with a remarkably erect, firm, and square-set figure, who stood beside us, and whom we seemed somehow to know, though puzzled to name him. He was dressed in flowing and curiously-embroidered robes, with a girdle at the waist, at which hung a square and a pair of callipers, and he carried a pencil in his hand. His countenance, though expressive of eloquence and fancy, had withal a certain shrewd wide-awake business look, which showed him to be eminently a practical character. Much interested by his appearance, we inquired respectfully whom we had the honour of receiving?

"I am the Genius of Architecture," he replied, looking at us with a half-kindly, half-sarcastic smile; "and, as I observed just now, I am pleased to see that you find the panorama of a few of my past achievements worth looking at, though you were disposed a little while ago to slight me in the present tense."

"You are heartily welcome," we replied, "and perhaps we may plead, in excuse for not having recognised you at once, that you have not been about very much lately."

"That is true," he said; "the fact is, when you moderns took to imitating everything we had done before, I saw that I was quite superfluous, so far as such an aim was concerned. In fact, I may say that I never do the same thing twice, in exactly the same way; although, as you have always done me the justice to say, I act upon the same principles throughout all my undertakings."

"Yes," we replied, "we have endeavoured to keep that before the public, but it is wonderful how difficult it is to get them, or even the profession (with a few exceptions), to understand it, or to see wherein the principle consists. They will always be running after particular forms or details, and each time they get a fresh one they seem to think they have found a new principle."

"Well, of course it is possible," said our visitor, "to make too much out of principles. No doubt, when I worked with the Greeks, we did go into the principles of things, down to the roots I may say, and worked them out with the severest logic. Ah," he said, with a sort of sigh, "those were the fellows to have to work under you; I shall never have their like again: such clear heads to understand the reason of everything, and such a thoroughness of purpose in working it out in practice! But when we built the Gothic cathedrals (and I really think that is as good a thing as I have done for the world), we made precious little fuss about principle, I can assure you, whatever people may fancy now."

We observed that we had for some time begun to think that too much had been said on that score by modern critics.

"Why, yes; you see," he answered, "there was a job to be done, a puzzle to be solved, as it were; and wherever that is the case, there is always a clear course for architecture. We had the impetus, or the impulse, or whatever you like, in the ecclesiastical enthusiasm of the time, which demanded to be glorified in great buildings; and then there was the practical difficulty involved in managing the vault, and making its design and construction consistent. I think we fairly pounded at that till we solved it."

"You solved it mechanically, at all events," we observed, "in the fan vault; but why keep repeating the rib form of design there, when its reality had——"

"I told them," interrupted the old gentleman sharply, apparently rather nettled at anything like a criticism,—"I told the masons at the time that all that fiddle-faddle work had nothing to do with the structural design; but I do not know," he added, relentingly, "the fellows had got fond of ribs, I suppose, and like all the sons of men since Adam, imagined they could not get along without them. And, after all, they look very well, you must admit; and where's the good of being too pragmatical? There are many very pretty things in art which it would be difficult to defend on strict principle, and yet which one would be very sorry to lose."

We assented heartily. "But," we added, seeing that our visitor seemed rather discursive, and wishing to get at the point of his visit, "we were interested in your remark just now, that architecture was all right as long as there was a problem to be solved. Perhaps, you have some practical application to make of that?"

"The very thing I was coming to," he said. "You see I thought it was a season for old friends to look each other up, and so I concluded I would call, and I took a walk round the town first."

"Well? Eh?"

"Well, you see, I did not know much of what had been going on, because, as you yourself half hinted, my help had not been much invoked of late years. There seemed to be a good deal doing, but no very settled way of doing it."

"Did you see the Law Courts?"

"Yes; your description last week interested me; the faults there will be rather sentimental than practical, I fancy. I understand the English are very contemptuous just now about 'sentimental grievances.' They may be right; but, at any rate, I should call it a very sentimental grievance to have modern law courts put up in an ancient ecclesiastical style. But if people will have scenery I suppose they must. I don't understand it, you know; it is such an utterly different thing from what I ever was mixed up in. The people who talk about truthfulness in architecture, and all the while go on imitating these old styles, seem to me like 'serious' persons who take their children to the pantomime every year, all the while telling them it is very foolish."

"You are severe. There must be a good many new churches up since you gave us a look. Did you find nothing to admire in them?"

"Oh! pretty well, I dare say; but, you know, I think church-building (Mediæval type) has been done, for good and all. I do not see why its spirit should walk the earth in this multitudinous fashion. There is your Thames Embankment, now,—that is a thing after my own heart, at least as to the general scheme and the practical workmanship. If only you could have got something of powerful and expressive detail into it, instead of toy balustrades, that look as if they came from the top of an Italian palace, and those senseless masses of stone, which carry nothing, at the landing-places."

"That is an engineer's work. Neither the credit nor the blame belongs to us."

"Eh? I don't quite understand. But, by the way, that reminds me,—Why are your new bridges so infernally ugly, and even absurd, in design?"

"That's the engineers, too," we replied, really relieved to have so good a way out of it.

"The 'engineers' again. Pray, if it is not a rude question, who are they?"

We explained.

"Well," said our visitor, "that beats everything. Then, you have two building professions in these days, one to build expression without construction, and the other to build construction without expression! Upon my soul, I don't wonder you are rather at sea!"

"That is hardly the fact," we replied. "You seem to be a little given to antithesis, which, permit us most respectfully to observe, is a form of speech very liable to lead to exaggerated statements. As a matter of fact, both engineers and architects do a good deal of each other's work; which shapes the best all round it would hardly be good taste on our part to endeavour to pronounce. We ourselves have long thought, however, that the line of demarcation between the two professions was too strongly drawn. Whether it can be done away with entirely, with advantage, is another question."

"Well," he said, "it seems incomprehensible to me. Building is building, all the world over; and architecture is only building with expression, which no building should be without. It seems to me you are letting a separate guild of workmen monopolise what should be the common property of the whole world of constructors."

"Well, you see," we represented, "there is a great rage for iron now for all these railway and bridge constructions, and our people are not so well up in iron; and you must admit you never taught us much about it."

"How the deuce could I?" he replied, rather testily; "it was never tried as a constructive material till my *bonâ fide* reign was interrupted. But I always inculcated the best and most scientific use of all the materials you had. Though I confess I don't take to iron, as far as I have seen it, and I don't see how it can be very permanent. But if it turns out to be, on fair trial, you will, of course, have to take to it, and learn all about it, willy-nilly."

We bowed.

"But now do," he added, "try and get something settled, before my next visit, in regard to this double building profession; there may be reasons for it, in the present state of things, that I don't see; but really it seems to me a curious anomaly. By the way, what are your means (if any) for providing opportunities for consultation and mutual interchange of opinions on this and other professional subjects? Have you anything like the Mediæval guilds now?"

"There is an association," we cautiously observed, "among the younger members of the profession, for mutual instruction and improvement."

"Ah!" he said, "I fancy I came across their meeting; there was a lively discussion going on; the young men's ideas may be rather crude, but they seem really in earnest, and interested in their profession, which is an important point in their favour. I thought I saw lights in an upper room in the same building, too; is there another——"

"Hush-sh-sh-sh-sh!" we exclaimed, really alarmed, — "that's the Inst—— the senior society, in short."

"Well, and what then?" he asked: "what's the matter? Do they do anything too shocking to——"

"Hush-sh-sh-sh-sh!" we repeated, laying our hand on the arm of our incautious guest,—"Pray, speak in a whisper; they don't like to be talked about."

"Why, bless, my soul!" he replied, "what's wrong? What do they do?"

"Oh," we explained, "as far as we know, they read papers and hold discussions, pretty much like the younger Society."

"And are their papers good?" he asked; "do they arrive at anything of practical value?"

"It is impossible to say," we replied; "it is believed, and there are even those who confidently affirm, that it is so in some cases; but everything is carried on strictly with closed doors."

"You don't say so? Then, what is the use of their researches?"

"We cannot say; an awful mystery surrounds them——but, pray, *pray*, change the subject; if it were to come to the ears of the secretary that we had permitted a discussion of the Society's concerns, we——we could not answer for the consequence!"

"Dear me!" he replied (rather sarcastically, as it seemed to us). "Well, all I can say is, that if they do not honour me publicly, I do not see how I can honour them publicly. However, to come to my point——"

"One word," we said, venturing to interrupt him, "do you know anything of a sort of panacea for adapting architecture to the wants of the present day, which has been put forth by some practitioners, in *your* name? They call it the Queen Anne style."

"Give you my honour," he said, "I have nothing to do with it: never heard of it till this minute. Queen Anne? Why, that's brick building with some remnants of mongrel Classic details, isn't it? I hardly remember, for I never was consulted about it? What do they mean to use that for? Wash-houses?"

"It is given out," we said, "that it is the real way to make architecture popular, and suit it to the million."

"Whew——! How then?" he asked.

"Because, they say, it is the ordinary builders' and joiners' vernacular."

Our friend stared indignantly at us for a moment, and then burst into a fit of laughing. "Vernacular?" he said at last. "By all that's holy! and so after all I have shown you in my panorama of the past,—the glories of Egyptian, Greek, Roman, Byzantine, Gothic building,—you in these modern days of enlightenment are going to raise architecture again to her former glory by reducing her to the level of what Dick, Tom, and 'Arry can understand and execute. Well, that's *too* good. Upon my word, my friend, I don't wonder that I found you in rather a brown study. But come, that can't be truth; you're 'chaffing' me now, arn't you?"

Of course, we protested our incapability of taking such a liberty.

"Well," he said, "so that's the last new 'fad,' is it? Well, it will not last long, and will go the way of all fads. But it's getting late, and I want to deliver my mind before I go. I was saying that as long as architecture had something new to achieve, there was no occasion to go hunting old trails or trying to invent 'originality.' And you must have observed that in the dissolving views I showed you of some past phases of architecture, there was nothing that

related purely to the social architecture of the people at large."

"No," we said, "we have often noticed that: it is all temples or palaces."

"Yes," he replied, "and it is difficult at first sight to know how any mere social architecture could ever rise to the grandeur of some of those achievements in building; perhaps it never can quite do so. But your modern great towns are great fields for a new progress in architecture, in a direction that has not been much travelled as yet. I cannot show you panoramas of the future, as I did of the past; but you will agree with me that it is possible to conceive a great city in which there shall be no unhealthy dwellings, either for rich or poor; in which the street architecture, instead of being dreary, monotonous, and depressing, shall be bright, expressive, and varied in outline and colour; where houses will be built not in the most flimsy, but in the strongest and most monumental manner; where streets shall be laid out wide enough for all purposes of traffic, and light and air, yet not with a dull formality, but with a fancy and invention which will seize every suggestion in the site which could lend itself to picturesque effect, and develop it to the utmost, so that in every neighbourhood there should be bright and interesting corners, where fountains, monuments, and other objects pleasant and suggestive to the eye and mind will find place, and the city be a place of interest instead of a dungeon. Find out how to do this in the best manner, and with the best and most durable building consistent with true public economy, and you will perhaps have done as much for human happiness, through the art of building, as even the architects of the great cathedrals."

"But you would not underrate the importance and beauty of great buildings?" we suggested.

"By no means; but take the opportunities modern life naturally affords you: make your great bridges and stations, and other such works, really fine and expressive structures; and when you have to deal with less utilitarian erections (which cannot be very often), try to be more sparing and more thoughtful in your decorative treatment of them. Endeavour to have a meaning and a thought in each detail, and you will be surprised to find how full of interest they will become, and how much originality you will, almost without knowing it, evolve."

"It is a bright picture," we said, thoughtfully, reverting to the first portion of his advice more particularly, "but it seems a Utopian one; at least, as we stand now."

"Its realisation may be far enough off, I admit," he replied; "but every step that is made in the right direction counts for something, and there is a visitor at hand who may advance you one step, if you will make the most of his assistance."

As he spoke there was a slight tap at the door, which was opened quietly, and a very young man, of a serious but earnest and hopeful countenance, advanced into the room. Turning to our other visitor for an introduction, we found that he was no longer there; and the new-comer said, with a very engaging manner, "I must introduce myself. I cannot be very long with you, but I am a firm friend as long as we are together, if you will only make use of the opportunities I offer you. Neglect these, and we must eventually part with sadness and regret on your side, and perhaps with reproach on mine. Make use heartily and strenuously of the time I place at your disposal, and I will go with you in every scheme for good, and you will never regret that we met."

"And your name?" we said, much pleased with our new friend's address.

"I have done nothing as yet," he said, modestly, "to merit a name; I am content to be known by my number: 1877."

"Ah! and so you have really come," we said, offering our hand.

"Yes," he replied, "it is I: you may hear the bells ringing to welcome me."

And here a peal of bells did ring out with so joyous a clash and clang that we awoke with a start. The fire was nearly out: the *Times* had slid down into the hearth, and a cinder had fallen and burnt a hole in the Conference telegrams. "A happy new year to you!" said a well-known household voice; "do you know it is past midnight?"

It certainly was: and, our vision having fled, it only remains to pass on the wish to our readers, hoping that all of them may meet and part good friends with "1877."

## CHURCH BUILDING AND RESTORATION.

MR. CLIVE NEWCOME, corresponding, in Rome, with his friend, Mr. Arthur Pendennis, in London, expatiated, with all the force of Thackeray, about the pang which every one who proudly calls himself English and Protestant has often felt on reflecting that he and his countrymen are voluntarily shut out from the traditional pale of Christendom. "You shall kiss," writes Mr. Clive, "the hand of a priest to-day who has given his to a friar, whose bones are already beginning to work miracles, who has been the disciple of another, whom the Church has just proclaimed a saint,—hand in hand they hold by one another till the line is lost up in heaven. Come, friend, let us acknowledge this and go and kiss the toe of St. Peter." Indeed, it is just that worn toe of the image of the apostle,—or for aught that can be proved to the contrary, of some Pagan hero,—that makes a stronger appeal to a few travellers than anything else to be seen upon, or encountered within, the walls of the great cathedral. Between, however, time-honoured ceremony or reverent ostentation and our England of to-day, an ocean is not only flowing, but an ocean which no engineer with any soul for his scientific vocation would care to span even if he could; and "yonder old statue of Peter might have been Jupiter again surrounded by a procession of flamens and augurs and Augustus, as Pontifex Maximus, to inspect the sacrifices; and my feelings (Clive Newcome's feelings) had been doubtless pretty much the same."

That worn toe represents the conviction of ages,—of myriads of the human race,—from the time when the Emperor Theodosius put to the vote of the Senate the important question,—"Whether the worship of Jupiter or that of Christ should be the religion of the Romans"; when, after a sway of 1,100 years, Jupiter was "condemned and degraded" by a very large majority. Gibbon did not hesitate to describe that revolution as a prosaic historical event. Nor, as far as the great mass of the population were concerned, did it mean more than a transfer of allegiance from one form of idolatry to another. The symbolism of the early Christian Church which, at a later period and at intervals, successive reformers have attempted to modify or abolish, was founded upon an earlier symbolic system of laws, which Cicero ridiculed. The tombs and trophies of spiritual heroes attracted, in the hearts of the faithful, a similar kind of awe and reverence to that which had before been felt for mythical deities. The tricks played upon the populace by the agents of a superstition were emulated and surpassed by the priests of a religion. Hollow statues, within which were concealed living men, had spoken to the ignorant heathen; the congealed blood of martyrs liquefied before the eyes of a true believer. The Pagan traveller, bent on a journey, or after his safe return, had performed a show of sacrifice to the gods of his hearth and home; the Roman Christian appealed to a tutelar saint, and prostrated himself before the conventional relics of some martyr, to ask for protection on the road, or to offer thanks for escape from dangers. Roman priests of the earlier persuasion wore robes of purple; scarlet is still the distinguishing badge of eminence in the Church. Roman senators offered wine and incense at the altar of Victory before commencing their labours; a similar sacrament, though of purer intent, still precedes the deliberations of many Christian assemblies. The world,—ultimately the gainer by a change of which history then took little note,—lost thereby a great deal. In the cities of the Roman Empire whole libraries were destroyed; and in Alexandria the accumulated learning of centuries was ruthlessly committed to the flames. In Milan, Archbishop Ambrose taunted the people with their instinctive conservatism, and laughed at the deeds of their ancestors; in Tours, Bishop Martin, at the head of a faithful following, razed temples to the ground, destroyed idols, and rooted up consecrated trees. These fanatics preached the unconscious truth that destruction was necessary to improvement in the arts; for upon the same kind of law which is apparent in divine architecture depends the progress of man's work. "From the war of Nature, from famine and death," says Mr. Darwin, "the most exalted object which we are capable of conceiving, namely, the production of the higher animals, directly follows." Thus, in somewhat a like manner, the fanaticism of the fourth century invoked the genius of the eighth, which, in due time, produced Gothic architecture; and, 800 years after, the pious inhumanity and iconoclastic fervour of Western Europe,—awakened to the value of antique civilisation,—have been followed, in our own time, by a fanaticism of restoration, which may yet produce another and a new system of architecture appropriate to the genius of a not distant future.

The revenges of time are the very bases of archæological science. If Pagan antiquities are now of more value, both commercially and artistically, than Christian ones, it is not entirely because they are older. At Arles, once a great provincial city of the empire, some of these are collected and exposed within the huge inclosure of a dismantled Mediæval church. In the Middle Ages the leisure of a devout clergy was occupied with transcribing in Gothic character the incomparable literature of invincible unbelief. To the Benedictine Abbey of Cluny, in France, we English, as well as the Spaniards and Germans, owe more than it is usual to admit. Founded in A.D. 910, it became in the eleventh and twelfth centuries the centre of the arts. There all the learning of Western Europe was acquired; and even Italians so far acknowledged the influence of Cluny as to send an embassy to report upon its uses and usages. Two thousand religious houses adopted its discipline. The first house in England was built at Lewes, in Sussex, soon after the Conquest; and until the fourteenth century all the English monasteries of the order were governed from abroad,—indeed, it was not until the middle of the fifteenth century that the parent Abbey of Cluny was deprived of any jurisdiction over them. The fact derived therefrom is that, though, before the time of Philip-Augustus and John, English architecture presents a few slight variations from the French, it is one and the same with that which sprang from the teaching and traditional practice of Cluny. If our architects now go, as they often do in common with their Spanish and German brethren, to France to study, they simply seek at the fountain-head of the Gothic streams, the same models upon which was formed the invention of their respective ancestors. From the fourteenth century Gothic architecture, in France and England, developed separately, and each in its own groove, until ultimately the islanders surpassed the workmen of the Continent,—more particularly in the science of vaulting and of timber construction; and the former were building churches and even cathedrals in accordance with true Gothic practice, almost a hundred years after the French building-traditions had been dispersed, corrupted, or forgotten. More traces of the old native methods of construction may still be found in the arts of this country than in the modern work of French artists, long devoted to the imitation of Italian, Roman, and Greek precedents.

Nor are the works extant of our great and often unknown builders misunderstood or unappreciated by the average English architect and master-workman of to-day. Hundreds of complete copies,—we have before now called them forgeries,—prove that in this country the Mediæval method of erecting ecclesiastical buildings has been reacquired within the space of less than fifty years. Nor is there any reason why modern churches throughout the greater part of Christendom should differ in shape or decoration from those of the thirteenth century. The language to be spoken in them has altered only in accent, the ceremonies to be performed within the walls but slightly vary, the creed to be repeated under their roofs is the same. "A Christian of the fifth century, with a Bible," to quote the words of Macaulay, "is neither better nor worse situated than a Christian of the nineteenth century, with a Bible, candour and natural acuteness being, of course, supposed equal. It matters not at all that the compass, printing, gunpowder, steam, gas, vaccination, and a thousand other discoveries and inventions, which were unknown in the fifth century, are familiar to the nineteenth. None of these discoveries and inventions has the slightest bearing on the question whether man is justified by faith alone, or whether the invocation of saints is an orthodox practice." Nor, if true architecture is the material reflection of current thought and manners, should the style of Roman church-building among the Gothic nations ever alter, except in petty details of minor arrangement. And though, in the English mode of worship and form of faith, Roman symbolism and superstition are said to have been eradicated, it is useless to deny that the feeling of ostracism, to which we referred at the beginning, has a vast, if un-

acknowledged, influence upon the architecture both of the Establishment and of Dissenting bodies of almost every kind. This feeling largely governs the arrangement and adornment of Protestant churches; it leads the Churchman to copy early native forms of Roman Catholic architecture, and the Nonconformist to imitate the modern edifices of the Established Church. An altar is not legally an adjunct of Protestantism, the English clergy are not spiritually endowed with any mysterious pre-eminence; but Protestant communities now write and talk about both as if they were. A chancel is still built in such a manner as to hold a species of altar, and often to divide the pastors from their flocks. Upon the window-glass heroes are often depicted in attitudes and engaged in acts subversive of the principles of the Reformation. Amongst Dissenters, even the Unitarian is sometimes careless whether the building in which he worships God possesses on its face or in its arrangement things which an earlier age would have recognised as symbolical of the Trinity. All religious denominations have the right, and some use it, to mark their buildings with towers, spires, and bell-cots. We have even known a synagogue to bear a cross, though, in the eyes of a scholar, without incongruity, since that emblem was borne by Pagan soldiers and other classes of the population of Ancient Rome.

The evident desire, intuitive or infused, of devout and zealous people, to perpetuate in new churches and similar places of worship old shapes and devices of architecture, has led to the adoption of the Gothic method of construction for almost all edifices of ecclesiastical character; and it would be useless at present to suggest any other form of church for Protestants than the Mediæval one. Indeed, the second half of this century may be hereafter signalised as peculiarly creditable to the English church-builder. The French have not been equally successful in picking up the links of Mediæval tradition; and neither M. Abadie nor M. Viollet-le-Duc has yet built churches comparable to some of those erected by English architects. The present Inspector-General of French Historical Monuments, M. Ballu, is the author of a large church near the Place de la Bastille, in Paris, which is ludicrously unlike the models it pretends to imitate; and the indignity of restoration nowhere offends with more aggravated force than in those masterpieces of French architecture which have been delivered up to the destructive experiments of native restorers.

In the matter of churches and their restoration, Sir Edmund Beckett,—in his recent book, to which we promised to return,—has collected a great deal of sensible observation and accurate criticism. He condemns the carelessness still frequent of erecting towers without an entasis, or at least without reducing their area at intervals as they rise. Towers, "not tapered by sets-off," look better if the walls diminish upwards at the rate of about 1 in 120, and rather more towards the top if very high. But that spires with an entasis are unpleasing is confirmed by a little attention to original English examples. "The king of spires" (Salisbury) is perfectly straight from its base to the very top, a distance of 200 ft.; and, referring to it, Sir Edmund adds, somewhat inelegantly, that "just as no Greek temple was ever able to surpass the Parthenon, so there is one best and perfect spire in the world." We cannot, however, be induced to think that it would be wise to copy every future spire from that of Salisbury; any more than that—should the worship of Jupiter be revived—all new heathen temples should be exact imitations of the Parthenon. To urge the desirability of simply reproducing perfection is to admit a desperate condition in the actual state of the arts. If new churches must be adorned with towers and spires,—and another age may perhaps demand some better reason for their introduction, and require a better means of investment for the money they cost, than is deemed worthy of consideration at present,—we believe that our architects are right in studying all the many varieties to be found not only in France but amongst those other peoples, who, like our own, obtained their early knowledge of Gothic building from her. It is not improbable that had fate forbidden Englishmen, during the last 300 years, to know anything at all about the artistic work of the Continent, English architecture would now reflect the style of the time. But since it has been decreed otherwise, the only remedy for what, in an art-sense, is a misfortune, is to know not a little but everything about the arts of all parts of the world; and that cannot be entirely accomplished by the mere study of photographs and pictures, as Sir Edmund Beckett, in his criticisms upon native and foreign forms of spire, seems to imagine. Nor is that judgment worth much which, having seen a church in Brittany or Auvergne, generalises therewith upon all similar works in other parts of France. We are precise on this point, to which we have before alluded in a preceding paragraph, because many excellent amateurs are in the habit of laying down rules and promulgating dogmas concerning national style and native architecture, totally unsupported, and even contradicted, by historical evidence, which, though within the research of all, is seldom examined for the purpose of testing the truth or error of brave bookmakers. The habit, however, of denouncing what is called "Foreign Gothic" is an excusable bit of vanity, and it is rampant abroad. We remember to have heard one of the best practical architects in France, who had restored cathedrals and châteaux and built churches, tell his pupils that in England there was very little Mediæval architecture; and that the few remains of interest interspersed over the island were inferior examples of Gothic art.

The subject of towers and spires would be incomplete without a short dissertation upon the best form of "conductor"; and upon this question Sir Edmund Beckett has an undoubted right to the attention of all,—though all will not agree with him. He says, at page 245 of "A Book on on Building":—

"This rod, whether ending in a vane or not, should be the first part of the lightning-conductor, which is always now a wire-rope three-eighths or half-inch thick, which should be attached to the very bottom of the rod, or it may be to the nut at the bottom. It is wonderful how inveterate the folly is of putting glass rings or neckcloths round the conductors when they are fixed to the wall; as if the 'electric fluid' (as the newspapers call it) wanted to leave the wire, which is a good conductor, for the wall, which is a bad one; or would be deterred by a bit of glass if it did. . . . Another common piece of folly is taking the conductor outside through a window instead of the shortest way down inside, as if the 'electric fluid,' like a bad smell, would be less dangerous in the open air. And yet another is the idea that it ought to go down into water, which these philosophers seem to imagine will dissolve the lightning like salt, or kill it as if it were gunpowder: while it will be dangerous if left dry. All these absurdities were proposed to me at the re-building of the great Doncaster church in 1858, and for the satisfaction of the alarmists, I got Faraday's opinion: I need not say what it was. The Houses of Parliament were *conductored* by Sir W. Snow Harris, who, perhaps, had even more experience than Faraday in that matter, and he laid the copper bands actually in the walls under the plaster."

In the same book Mr. Street, "the great professor of conservative restoration," comes in now and then for some of Sir Edmund's hard hits, especially for having substituted "mere boards, visible as such, instead of the ancient plaster," in the vaulting of the south transept of York Minster. The habit of leaving rough stone-work in vaults instead of plastering it is also stigmatised as an abomination of the "vigorous-style men." It is our author's opinion that to the members of what he calls the "conservative school" is due the greatest destructiveness in restoration; and he defies "anybody of real experience to deny that, practically speaking, our great churches are conservatively restored, as much as possible in the spirit of their own builders, by the school of architects of which Sir Gilbert Scott is the head, who do not talk about it; and that they are restored in the style of radical reformers by those who do talk the cant of conservative restoration." The remarks upon the value of good restoration, and of a good "restorer" wind up appropriately with a plea for St. Alban's Abbey, coupled with a gentle reminder that 30,000*l.* are required to make the "longest Gothic nave in the world" and the "oldest great church in this kingdom" as good as new.

We use the phrase, "as good as new" advisedly, because it expresses the meaning of restoration as it is generally practised at the present moment. To restore such a building as the Parthenon,—at least, as far as its external columns and the outside of the cella go,—would be simply to replace on the old foundations the original bits of marble, and other new bits where necessary; and at the close of the work the building would present an appearance almost identical to that which it presented in the time of Pericles,—damage to the marble from time and weather being admitted. But to restore Westminster Abbey is to impart to it an effect such as it never before possessed at any given period of its history. Neither the Greeks nor the Romans had any conception of the art of restoration; the languages of the Middle Ages contain no word equivalent to the modern one. The Athenians had been building temples and improving their form and ornaments for several hundred years before they began the Parthenon and other additions and embellishments to the injured city. There was then, at the end of the Persian war, no other thought than to clear the site upon which the ruins of their buildings stood; and erect others with other and fresh-cut material. At a later period, the Romans proceeded in a similar manner; and an emperor, ambitious to possess a brand-new palace, ordered that of his predecessor to be pulled down and another to be raised in its stead. Constantine is perhaps the first great name which has been brought down to the present day on a patched monument of incongruous splendour. His triumphal arch is described by Gibbon as "a singular testimony of the meanest vanity." It was adorned with sculptures ravished from another public monument; "and curious antiquarians can still discover the head of Trajan on the trophies of Constantine." That a future historian may write with like scorn of the similar fashion, though executed in a different way, of restoration cannot be doubted. In all parts of the known world, Christian builders emulated the example set by those who had attempted to commemorate the prowess of the first Christian emperor. In Constantine's new capital, at Athens and elsewhere, fragments, torn from the earlier public buildings, were cemented together to form churches, which the analytical genius of a later age has distinguished by the term "Byzantine." In other provinces of the Roman Empire, and notably in Southern France, the same procedure was adopted; and the style "Romanesque" was thereby invented. What in England has been called "Norman" is a crude and ultimately developed imitation of such buildings; and it was not until the substantial precedents of antiquity had been used up that the builders of Western Europe, forced, not unwillingly at the close of the twelfth century, to think for themselves, found out new combinations of architecture. The practice of the succeeding three centuries was not, as in Greece and Rome, a repetition of entire demolishment and reconstruction; but one of modification and addition, of underpinning and superstructural re-arrangement. Although the archæology of an old cathedral may extend over hundreds of years, as a covering for the faithful and a House of God, it took comparatively few years to build. The *master-workman* of the fifteenth century knew little of the original design and intentions of the *architect* of the twelfth or thirteenth, who, had he returned to earth, would in many instances have scarcely recognised his work. To impart to such edifices an appearance exactly similar to that which they presented at the first blush of the Reformation is the aim of restoration and the practice of restorers; and to alter them so as to make them assimilate to what their original designers intended, or even accomplished, is as much beyond the power of the one as it is opposed to the principles of the other. To pull down the chapel of Henry VII., and substitute the original east front of the Abbey, even if it were accurately known what that front was, would be called Vandalism, and condemned by everybody; yet restoration, to be logically carried out,—especially if it be permitted to destroy all that has been added to a Mediæval building since the Reformation,—ought to remove everything which is known not to have formed part of the original design, and this original design ought then to be renewed: an idea monstrous and suicidal, and as impossible to execute as to decorate St. Paul's Cathedral at the present day in accordance with the intentions of Wren, who left little or nothing to show that he had thought much about the subject.

But though the present mode of restoration is illogical, though some valuable Mediæval works have been thereby virtually destroyed, it is nevertheless a beneficent way of fulfilling the universal law of created things, human and divine.

"Imperious Cæsar, dead and turn'd to clay,
Might stop a hole to keep the wind away."

All over the world the defaced sculptures of temples and cathedrals have served at times to mend a road or barricade a ditch. But, of late years, before attacking an old building it has been necessary for the restorer to have studied its history and its mode of construction. If in his zeal he has injured it in parts, he has learnt how to reproduce those parts; and innumerable books, drawings, and photographs enable those who follow him to learn almost as much as he has learnt. One of the well-known "Lectures on Church-building," published

some twenty years ago by Sir Edmund Beckett, contains a passage which thoroughly illustrates the necessity of much that has since been done. "The first impulse," he said, "was to decide everything on speculative grounds, and after going on in confident ignorance for years at last it occurs to somebody to go and look for a little evidence about matters of fact, and then they find that they have been proceeding all this time without any ground whatsoever, just as philosophers invented no end of theories to account for the motions of the planets before Copernicus and Galileo thought of ascertaining what the motions really were." That in architecture there is no longer any need to found present and future practice upon speculative hypotheses is due to the labours of recent times; and if, instead of ruthless destruction and almost equally ruthless alteration, the spirit of modern economy and refinement calls for restoration, the results, we cannot but think, will be similarly beneficial in the end.

For the current history of the Gothic Revival makes one point clear: that the good sense of its professors revolts against it, after a short experience of its practical effects in the streets of our cities and the occurrences of our lives. However pleased they may be with good restoration, they are perplexed and often horrified with even good revival; and they shrink with dismay from the inevitable issue of their own arguments and their own labours. It is said of one of the most accomplished decorators, not long deceased, that, towards the close of his life, conscience frequently pricked him because he had led the public to admire a fatal facility for superficial adornment. He would willingly have foresworn every trick of ornament to have secured a better system of construction and more artistic forms of architecture. It is well known that Mr. Ruskin has retired, disgusted with every section of a community whose tastes he has largely helped to cultivate. The late Rev. Mr. Petit, who for years with pen and pencil preached the Gothic faith, ended his life with the conviction that an appreciation of the practical science and artistic refinement of the Greek is the best prelude to architectural study. A few English architects, who are pleased to call Socrates and Cicero "Pagans," now admit that the lintel and not the arch is likely to be the distinguishing constructive feature of the next century. Others, who have shown themselves fertile adapters of Gothic precedents, and have imparted an "oldness" to new houses with a success which neither time nor the elements could have equalled, now declare that "motley's the only wear." The Castles of Francis and Louis XIII., of Queen Anne and the Georges, are now said to be the best, and they are certainly the newest, old models to copy. Sir Edmund Beckett, however, remains faithful to his first and only love, and he is fain to believe that if she be not still the delight that others besides himself originally anticipated, the fault lies not with her, but her lovers. Admitting, in one of his "Lectures," that "a real architect is an artist of the highest rank," he concluded the series with the assurance that he was neither tired, nor had he been joked out, of Gothic architecture. Others may condemn the art and praise the artists; but, said he, "I uphold the art and find fault with the artists." Twenty years after, our author, in the maturity of his judgment, maintains that no architect may with justice call himself "an artist," and that "the hope of architecture" is little better than despair. Twenty years ago, in the decline of his imaginative powers, he believed that reform lay in finding out faults and the means of correcting them. It was to be obtained by censuring the particular bad thing and exposing the particular man who did it, "without respect of persons, openly, distinctly, and unretractingly,—*first taking care to be right*"; and he now publishes a book in which his principle of showing up blunders and the individuals who made them is accurately carried out, sometimes with the sole exception of his concluding proviso.

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**Alexandra Palace.**—Messrs. Norton, Trist, Watney, & Co. have been instructed by the mortgagees to offer this property for sale by auction, at the Mart, on the 8th proximo. It is stated in the announcement that "a portion of the land (about 250 acres) having extensive frontages to capital roads, might be immediately appropriated for the erection of numerous residences, which would yield a large revenue, either in yearly ntals or well-secured ground-rents.

## LONDON BANKERS.

THE joint-stock Banks of London were among the first to erect grandiose buildings for their offices, and the example set by them, and followed by others, has helped to make some of the narrow streets of the City appear to be filled with palaces. Many of the old private banks, however, still carry on their business in the most unpretending of houses; and perhaps the meanest is the dingy building by Temple Bar, which is occupied by the time-honoured bankers, Messrs. Child & Co. Mr. Hilton Price, a member of this firm, while investigating its history, "had occasion to look through a vast number of old cheques, bills, and cash-notes, extending in time over close upon two centuries," and he has compiled from the materials at his disposal a succession of lists of bankers, from the goldsmiths "keeping running cashes" in 1677, to the great houses of the present time, to which he has prefixed an historical Handbook of London Bankers, arranged in an alphabet of firms. From this interesting volume we propose to glean a few notices of the growth of banking in London, a subject which has a kind of fascination for most people, from the visions of boundless wealth that it is apt to conjure up.

The first goldsmiths were Jews, who invented bills of exchange, and accumulated large sums of money which they lent out at high interest to the nobility, upon the security of their estates. Edward I. robbed 15,000 Jews of their wealth, and then banished all of them out of the kingdom. The Lombards, who combined the three occupations of goldsmith, pawnbroker, and banker, came from Italy, to succeed the Jews, and gave their name to Lombard-street, which has remained to the present day the headquarters of the bankers. In Elizabeth's reign a larger number of goldsmiths lived in Cheapside than in Lombard-street, but after the Great Fire the majority had removed to the latter place. We find that in 1566, out of 107 goldsmiths, seventy-six lived in *Chepe*, against thirty-one in *Lumberde-streete*. In 1677, however, thirty-seven goldsmiths keeping running cashes resided in Lombard-street, which is a larger number than at present, for now there are only twenty-five banks in the street.

St. Dunstan was the patron saint of the goldsmiths' craft, and the Company of Goldsmiths therefore paid great honours to his memory. His image—of silver-gilt, set with gems—adorned their hall, and his memory was drunk in the *St. Dunstan's cup*. They had their *St. Dunstan's light* in the St. John Zachary Church, and their chapel of St. Dunstan with a second image of him in St. Paul's Cathedral. Moreover, he is styled in their books "Seynt Dunston, our blessed patron, protector, and founder."

Several of the early lord mayors followed the occupation of goldsmiths: thus Sir Nicholas de Faringdon, who filled the chair in 1308, was the son of William Farendon, who was sheriff in 1281, and gave his name to the City ward which still bears it. John de Chechestre, goldsmith, and maker of Richard II.'s great seal, was Lord Mayor in 1369, the year that William Walworth filled the office of sheriff. Sir Dru Barentine, the refounder of the Goldsmiths' Hall, was Lord Mayor in 1391 and 1413. Sir Martin Bowes, who lent Henry VIII. 300*l.* in 1544, received the same honour in 1476. Other celebrated goldsmiths were William Shore, the husband of Jane Shore, Edward IV.'s mistress, wrongly named Matthew in the well-known ballad of "Jane Shore," where we are told by the heroine,—

> "In Lombard-street I once did dwell,
> As London yet can witness well;
> Where many gallants did beholde
> My beauty in a shop of golde;"

and Sir Thomas Gresham, the greatest of English merchants, who, as well as his less-known father, Sir Richard Gresham, filled the office of King's Exchanger in the reign of Henry VIII.

In 1677 the present system of banking had been matured, and there are now in London five firms who are the immediate successors of certain of the goldsmiths mentioned in the "Little London Directory" of that date as keeping running cashes. They are *Barnett, Hoare, & Co.*, the representatives of Humph. Stocks,—"Black Horse," in Lombard-street; *Child & Co.*, of Blanchard & Child,—"Ye Marigold," in Fleet-street; *Hoare & Co.*, Fleet-street, of James Hore,—"Golden Bottle," Cheapside; *Martin & Co.*, of Duncombe and Kent,—"Grasshopper," Lombard-street; *Willis, Percival, & Co.*, of Thomas Williams,—"Crown," Lombard-street.

Mr. H. D. Macleod has exploded the old derivation of bank from the Italian *banco*, a bench or table, and proved that the money-dealers or money-changers were never called *banchieri* in the Middle Ages. The true meaning of *banco* is a heap or mound, and the word was metaphorically applied to a common fund or joint-stock formed by the contributions of a multitude of persons. Banking has grown from very small beginnings, and its growth has been very slow. The Goldsmiths of London were in the habit of depositing their unused capital in the Royal Mint until the credit of this depository was rudely shaken by the action of Charles I., who on the refusal of the City to lend him some money, seized upon 200,000*l.*, which had been placed there for safety. During the Commonwealth, the goldsmiths received the surplus cash of their various customers, and issued receipts or cash notes for various sums payable on demand, which passed from hand to hand, and were called goldsmiths' notes. They may be considered as the origin both of bank notes and of cheques. Charles II. followed his father's precedent, and dealt a heavy blow at the system of banking when he closed the exchequer in 1672, and robbed the goldsmiths of 1,328,526*l.*, which was their floating capital, lent to the Crown. The consequence of this scandalous violation of trust was the ruin of many of the principal bankers. Alderman Edward Backwell was one of the chief of these sufferers, and at the time of the closure the king owed him 295,994*l.* 16s. 6d., in lieu of which he received the promise of a pension of 17,759*l.* 13s. 8d. The largeness of his dealings is seen by a reference to his books, which are now in the possession of Messrs. Child & Co. These ledgers contain the names of a great number of important customers, among which are Charles II., Queen Henrietta Maria, James Duke of York, Prince Rupert, Duke of Monmouth, Duchess of Orleans, Countess of Castlemaine, Prince of Orange, Earl of Sandwich, and Samuel Pepys. In the latter's "Diary" Alderman Backwell is mentioned twenty-six times. John Colvill, of Lombard-street, was another of the chief sufferers, and the amount he lost was 85,832*l.* 17s. 2d. John Collier is only known from his loss, which was 1,784*l.* 6s. 4d.; for this he received a bond from the king for payment of 107*l.* 1s. 1d. per annum as interest. Very little interest was paid by Charles II., and none by James II.; but in the reign of William III., after a great stir had been made, the bankers got back half of their original debt, which was charged upon the national debt, and became a part of the South Sea Fund. The mention of this monster bubble brings us to another great era in the banking world.

Gay, in his letter to Snow, the banker, wrote of the fearful panic caused by the collapse of this huge swindle,—

> "When credit sank and commerce gasping lay,
> Thou stood'st, nor sent one bill unpaid away;
> When not a guinea clinked on Martin's boards,
> And Atwell's self was drained of all his hoards."

The firm of Atwell & Co. was not then of any great standing, and it stopped payment in consequence of the panic, but Martin's house remained unshaken. Messrs. Martin & Co., of 68, Lombard-street, still continue the business, which they claim to be the oldest in the city of London. It is supposed to have been established by Sir Thomas Gresham, who carried on his trade in Lombard-street, at the sign of the "Grasshopper," by which the house was known until the year 1770, when all the houses were numbered, and the "Grasshopper" became No. 68. Nothing, however, is known of the house between Gresham's time and the "London Directory" of 1677. From the latter it appears that Charles Duncombe and Richard Kent were at the "Grasshopper" at that date. Duncombe was at one time excessively rich, and bought for 90,000*l.* the estate of the Duke of Buckingham, at Helmsley, in Yorkshire, which is now known as Duncombe Park, the seat of the Earl of Feversham, a descendant of Sir Charles Duncombe, Lord Mayor of London in 1709. Pope refers to this transaction in the lines,—

> "And Helmsley, once proud Buckingham's delight,
> Slides to a scrivener or City knight."

Duncombe, through his connexion with the Treasury, got early news of the proposed shutting up of the Exchequer, and he thus saved his own money and that of the Marquis of Winchester (afterwards Duke of Bolton). Soon,

however, trouble came upon Duncombe. He was committed to the Tower, expelled from the House of Commons, and, after a division of 138 to 103, the confiscation of his property was determined upon. The House of Lords released the prisoner, and it is uncertain what was the final issue of the charge. Thomas Martin was a clerk for a time, but between 1701 and 1711 he became a partner, and the style of the firm was Stone & Martin. In 1794, the "Grasshopper" was rebuilt, and many changes have since taken place in its management, so that in 1872 the four members of the firm all bore the name of Martin.

One of the earliest cases of wholesale speculation among the bankers was that of Alexander Fordyce, of the firm of Neale, Fordyce, & Co., who was found, on the failure of the bank in 1772, to have put his name to bills in circulation to the amount of four millions sterling. In 1766 he speculated so successfully in East India stock as to be left in possession of nearly 100,000*l.* He then purchased an estate, gave great entertainments, and married the daughter of an earl. Soon afterwards he lost about the same amount, and luck then continued against him. On one occasion he visited a Quaker for the purpose of borrowing money, but the worthy man wittily parried the application with the remark,—"Friend Fordyce, I have known many people ruined by two dice, but I will not be ruined by four dice."

Henry Fauntleroy, the acting partner of the old-established bank of Marsh, Sibbald, & Co., No. 6, Berners-street, was hanged for forgery on the 30th of November, 1824. He defrauded the Bank of England of 360,000*l.*, and kept an accurate account of all the frauds that he had committed. Among his papers was found the following statement:—"In order to keep up the credit of our house, I have forged powers of attorney for the above sums and parties, and sold out to the amount here stated, and without the knowledge of my partners. I kept up the payments of the dividends, but made no entries of such payments in our books. The Bank first began to refuse to discount our acceptances, and to destroy the credit of our house. The Bank shall smart for it." Fauntleroy kept an open house during the days of his supposed prosperity, and he gathered together a large circle of acquaintances. Dickens used to relate an anecdote which shows what manner of men these acquaintances were. It must be premised that at the elegant dinners in Berners-street and at Brighton some particularly choice Curaçoa always made its appearance. The night before the execution three gentlemen visited the condemned cell at Newgate, and as they were about to retire, one of them turned back to the wretched man, and said,—"Fauntleroy, you stand on the verge of the grave: remember the text, my dear man, that 'we brought nothing into this world, and it is certain we can take nothing out.' Have you, therefore, any objection to tell me, as a friend, where you got that Curaçoa?"

Very shortly after the break-up of the Berners-street bank, the old-established firm of Remington & Co., Lombard-street, stopped payment, owing to the roguery of the active partner, Rowland Stephenson. In December, 1828, unfavourable reports as to the soundness of this bank got abroad, and in order to counteract these rumours, five of the principal bankers in London investigated its affairs, who were so well satisfied with the result that each of them advanced 20,000*l.* on such securities as they found the bank to possess, and induced many persons who had withdrawn their accounts to return them. It was soon afterwards discovered that the sealed packets, endorsed with the names and addresses of the depositors, and the amount of the contents, were merely dummies, and contained nothing. On the 27th of December Rowland Stephenson, who was M.P. for Leominster, and treasurer of St. Bartholomew's Hospital, absconded with 70,000*l.* in Exchequer bills, having previously made away with 20,000*l.* The panic of 1837, known as the "American Panic," caused the stoppage of the house of Sir James Esdaile, Esdaile, Grenfell, Thomas, & Co., of Lombard-street. The partners, however, paid their creditors by a loan advanced to them by all the principal London bankers; which loan has since been repaid, the last payment being made on Feb. 3, 1873. After these severe shocks to credit several years passed without any considerable failure, but in 1856 occurred the disastrous smash of the Royal British Bank, which overwhelmed many hundreds of families in ruin; and the conviction of Strahan, Sir J. D. Paul, & Bates for the misappropriation of securities left in their charge. Thus ended the old-established bank, supposed to have been founded by John Snow, a goldsmith, at the Golden Anchor, in the Strand, in 1660. In 1866, the panic, from the effects of which we can hardly yet be said to have recovered, caused the suspension of Overend, Gurney, & Co., the Agra and Masterman's Bank, and the private bank of Odling & Co., whose business had just been transferred to the English Joint-Stock Bank. The history of Odling's house is interesting to us, on account of Samuel Rogers the poet's connexion with it as senior partner. On Sunday, November 24, 1844, a very strange robbery took place at the bank: the strong-room was opened, and property abstracted to the amount of about 50,000*l.*, which was made up of thirty-six one-thousand-pound notes, 1,200*l.* in gold, and other notes and bills of exchange. Although an invalid partner was in the house, and a clerk on duty, at the time, the burglars were not heard. A reward of 3,000*l.* was offered for the recovery of the property, and a free pardon to any one giving such information as would lead to the capture of the offenders. Nothing was heard for a considerable time, either of the robbers or of the notes, until one morning a parcel, addressed in a strange hand, was received by the firm, and found to contain all the Bank notes that had been stolen.

In any notice of London bankers the firm of Coutts & Co. must take a prominent position. It was originally established by a goldsmith of the name of George Middleton, who kept a shop near St. Martin's Church, St. Martin's-lane. In 1692, George Campbell was his partner, and about 1754, after the death of Middleton, James Coutts was taken into partnership by Campbell. Campbell died in 1761, and James Coutts then brought his younger brother, Thomas, into the business. Messrs. Middleton & Campbell kept the accounts of Queen Anne, and most of the members of the royal family since her time have banked with their successors. Thomas Coutts offended George III. by advancing 100,000*l.* to his son-in-law, Sir Francis Burdett, towards the expenses of the Middlesex election. The king sent for Coutts, and having satisfied himself of the fact at once withdrew his account from the bank, which he transferred to Messrs. Drummond. This incident placed the latter firm in an awkward position, because the king's eldest son also banked with them. George III. desired Drummond not to make any further advances to the Prince of Wales. If he disobeyed his Majesty he would gain the favour of the Prince; but if he obeyed him he would offend the Prince, and lose the royal accounts at the decease of the king. He accepted the latter alternative, and the heir-apparent went to Coutts, who let him have what he required.

Messrs. Child & Co., as has already been mentioned, trace their origin to one of the old firms of goldsmiths who kept running cashes. John Wheeler, goldsmith, was one of the pikemen who formed a guard of honour to escort Queen Elizabeth through the City on her way to Greenwich, July 1st, 1559. His descendant, William Wheeler, moved, in the early part of the reign of Charles I., from his old shop to the "Marygold,"—hitherto a tavern next door to Temple Bar. The grandson of this Wheeler was Francis Child, the first banker to give up the goldsmith's business, and in consequence called by Pennant "the father of the profession." The old ledgers of Messrs. Child are full of historical names. Oliver Cromwell kept an account at the "Marygold," but the book which contained the particulars has not been heard of for fifty years. Nell Gwynne was one of the customers of the bank, and the doctor's receipt for attending "Madame Gwynne" in her last illness, and for remedies and medicines, amounting to 109*l.*, is still in existence. Dryden is said to have deposited 50*l.* in the hands of "Mr. Blanchard, Goldsmith, next door to Temple Bar," for the discovery of Lord Rochester's bullies, who assaulted him in the street. William III. and Mary II., Prince George of Denmark, Barbara Duchess of Cleveland, the great Duke of Marlborough, and Sarah, his wife, Archbishop Tenison, Bishops Stillingfleet and Burnet, Lady Rachael Russell, and Lady Mary Wortley Montagu, all banked at the little house by Temple Bar. Mr. Price tells a good story anent the marriage of John, tenth Earl of Westmoreland, to Sarah Anne, only daughter of Robert Child, the last of his name, and head of the bank in 1782. The nobleman was dining one day with the banker, when he proposed the following query:—"Child, suppose that you were in love with a girl, and her father refused his consent to the union, what should you do?" "Why run away with her, to be sure," was the prompt reply of Mr. Child, little thinking that it was his daughter who was referred to. Lord Westmoreland took the advice, and eloped with the young lady from her father's house in Berkeley-square. A watchman found the front door open, and raised the alarm; Child took a post-chaise and pursued the fugitives, overtaking them in Cumberland. Lord Westmoreland stood up in his carriage and shot the leading horse in Child's chaise, by which means he escaped over the border, and was married before the father could interfere. Child never forgave the pair; but he left the whole of his fortune to their daughter, Lady Sarah Sophia Fane, who married on the 23rd of May, 1804, George Villiers, Earl of Jersey. Child's is now the only bank in London in which the clerks become partners in order of seniority. This custom was general in the early part of the eighteenth century, and probably took its origin from the practice of masters taking apprentices into partnership after they had served their full time.

Near neighbours of Child & Co. are Messrs. Hoares & Co., at the "Golden Bottle," in Fleet-street. James Hore, or Hoare, goldsmith, kept a running cash in Cheapside in 1677, and Sir Richard Hoare was one of those who received a mourning-ring of the value of 20*s.*, at Pepys's funeral, in 1703. The large firm of Glyn, Mills, & Co. appears to have commenced business in Lombard-street between the years 1740 and 1754. Messrs. Smith, Payne, & Smith's house came into existence about the same time, and was started near Coleman-street, Lothbury. The early history of this bank is an interesting one. The original Smith was a well-to-do draper at Nottingham, who, for the security of his customers, took charge of their ready cash, and gradually grew into a regular banker. One of his descendants found a useful London agent in a Mr. Payne, and soon afterwards the two went into partnership, commencing the London business, which still flourishes. No Payne is now a member of the firm, and all the seven partners are Smiths. The origin of bank notes is to be found in the goldsmith's notes for the amount of money deposited with him, and the earliest record of these is to be seen in "Pepys's Diary," where, under the date of the 29th of February, 1667, we read,—"Wrote to my father, and sent him Colvill's note for 600*l.*, for my sister's portion." The Bank of England was founded in 1694, and on the 11th of February of the following year, the following advertisement appeared in the *London Gazette*:—"The Court of Directors of the Bank of England hereby give notice that they have empowered their cashiers, Mr. Thomas Speed, Mr. Robert Hedges, and Mr. Thomas Madolees, and one of them, and no other, to give notes on behalf of the Governor and Company of the Bank of England, either for payment of money or bills, for which they are to be accountable." As early as the 15th of August of the same year the Bank called in their "marbled notes," on account of some of them having been forged. About the middle of the year 1729, Francis Child introduced a printed form of promissory note, having a picture of Temple Bar in the left-hand corner. They were worded much in the same manner as the Bank of England notes are at the present day. Mr. Lawson states in his "History of Banking" that these notes were discontinued in 1750, but Mr. Price proves that they were still in use in 1793. The Bank of England did not recur to their early practice of issuing notes until the middle of the eighteenth century. Ten-pound notes were first issued in 1759, five-pound notes in 1794, and one and two pound notes in 1797. Messrs. Child used printed cheques as early as the year 1762, but discontinued them about thirty years later. When the present custom became general they were the last firm to re-adopt it, and it was only about twenty years ago that they revived their practice. Messrs. Mead & Co. (whose firm flourished in the early part of the last century) were the first bankers on record who gave pass-books to their customers. Lady Carteret, writing to Mr. Child in 1715 says, "I should be glad of a book, as I used to have at Mr. Mead's, with an account of all that you have received upon this article." Robert Herries, the founder of the present firm of Herries, Farquahar, & Co., of St. James's-street, was the originator of the system of circular notes which has been found so useful by travellers on the Continent. Before

the establishment of his own bank, Herries had been a partner in Coutts's, and it is asserted that when he first conceived the idea, he explained it to Thomas Coutts, who so thoroughly disapproved that he dissolved partnership rather than adopt it.

We have already noticed how the goldsmiths gave up their shops and turned into bankers, and how new firms were continually being started; but we have still to notice that remarkable revolution in the history of banking which commenced when the London and Westminster Bank was started by James William Gilbart, in 1834. In 1708 a clause was inserted in the charter of the Bank of England, prohibiting the establishment of any other bank having more than six partners. In 1826 an Act of Parliament was passed to permit the formation of banks having more than six partners, with the right of issuing notes outside a radius of sixty-five miles from London. When the principle of joint-stock banking was started in London, it met with a formidable opposition, more especially from the Bank of England. The opinion of the Solicitor-General was taken as to the legality of the scheme, and he gave his opinion that any number of joint-stock banks might be established, provided they did not issue notes within sixty-five miles of London. The London and Westminster Bank then came into being, to be followed by many banks of a similar character. One of the chief opponents of joint-stock banking was Samuel Jones Loyd, now Lord Overstone, who, in his evidence before the Parliamentary committee on the Bank Charter Act in 1840, said,—"I think joint-stock banks are deficient in everything requisite for the conduct of banking business, except extended responsibility." The public were, therefore, naturally surprised when Messrs. Jones, Loyd, & Co., in 1864, disposed of their business to the London and Westminster Bank.

The popular appreciation of the advantage of banking has grown since the time when the Right Hon. Sir Paul Methuen, who gave his name to the Methuen treaty, left 50,000 guineas sealed up in bags; but the principles upon which the early goldsmiths first founded their banking businesses must have been thoroughly sound, since, as we have seen, several of the original firms, which have flourished for two centuries, are still in existence, and give promise of flourishing for many years to come.

## UNIONISM IN THE FRENCH BUILDING TRADES.

THE various suggestions thrown out at the Workmen's Congress recently held in Paris, have been promptly followed by movements which will produce some effect on the building trades of France. Two months have scarcely elapsed since the Congress closed its doors, and already we hear that several provincial towns have followed the example propagated in Paris. At Besançon a grand meeting was held in the Town-hall, and the working-man delegate, who represented the building trade of the locality at the late Congress, explained to his audience all the theories propounded on that occasion. M. Oudet, who represents Besançon in the Senate, expressed his sympathies with the meeting, and was consequently called upon to vote for the abrogation of article 291 of the Penal Code, as proposed in the Bill submitted to the National Assembly by M. Lockroy. This article renders trade unions illegal, for it decrees that meetings of more than twenty persons cannot be held unless special permission be obtained from the police. Hence, instead of unions, the French workmen have formed Syndical Chambers, consisting of a committee numbering less than twenty persons. As a result of the meeting, a considerable number of workmen enrolled themselves as supporters of trade unionism. From Besançon the movement spread to Grenoble, and there the house carpenters asked permission to constitute themselves into a trade union; but the authorities thought fit to refuse their sanction on the ground that it would be better for all parties concerned to await the result of the debate on M. Lockroy's Bill.

At Lyons, the house decorators and plasterers have issued a manifesto, addressed to their employers, and describing minutely their grievances. The old difficulty that the augmentation in wages does not correspond with the increase in rent and in the cost of provisions, is, of course, the first cause of complaint; then it is explained that this branch of the trade is especially affected by the dull or dead seasons. Thus, it is asserted that a journeyman works on an average, for six months, ten hours per day, receiving 5d. per hour, and a hundred and fifty days at 5 francs equals 30*l*. During the six other months he only works from eight to seven hours and makes little more than 3*s*. per day, or, in all, 21*l*., during the dull season. This gives, for 300 days' work, which, deducting holidays, &c., is the most that can be obtained, a total annual income of 51*l*. On these wages the workman must live 365 days, and he has therefore a little less than 3*s*. per day. Then he must not only provide himself with food, fuel, light, clothes, amusement, &c., but he must pay an exorbitant rent, coupled with heavy taxes, and buy his own tools. It will be seen that the house decorator holds a more inferior position, financially speaking, in France than in England. Further, if this is all the remuneration obtained by skilled workmen, commoner work must be paid according to a much lower scale, and there are many workmen in the building trade who, counting the dull seasons and slack work, do not earn more than 2*s*. 4*d*. per day all the year round. The employers have been invited to verify these assertions, and to make some effort to relieve their workmen from the distress and poverty with which they are beset.

The house decorators of Paris have, on their side, resolved to reconstitute their union or Syndical Chamber, and have elected a committee of eleven workmen to draw up the statutes, &c. Perhaps the house decorators have been somewhat encouraged in this matter by the success just achieved by the joiners' Syndical Chamber. This branch of the trade has been in communication with the Masters' Association for some months past, and has at last obtained a formal declaration, that from the 1st of January, 1877, and henceforth, joiners shall receive 5*s*. per day.

From these various items of news it will be seen that the organisation of labour in the building trades of France is making decided progress. At the same time, it should be borne in mind that the French working-class leaders have completely eschewed the policy which results in strikes. Towards the close of the Empire the working-classes seemed infatuated with the love of strikes. Nearly every trade had its disturbance, but the terrible lessons administered, and defeats experienced, conclusively proved that the French working-class organisations were not sufficiently powerful to wage war by means of strikes. Besides, the French employers have the advantage of possessing better organised Masters' Syndical Chambers than the workmen have ever been able to institute; a fact which, however, is due to the partiality, not of the law, but of its administrators. The police have rarely, if ever, interfered with a master's union, while they always watch, and often dissolve, workmen's associations and meetings.

At the Congress, all the speakers proclaimed the necessity of union, not for the sake of organising strikes, but to form benefit funds, to institute classes for technical instruction, to arbitrate in the matter of wages, to give legal council and support when required, to form co-operative stores, and, finally, to open co-operative workshops. Such, in a few words, is the programme of French-trade-unionism, and these projects receive active support from a great number of workmen attached to the building trades.

## THE ENDOWMENT OF SCIENTIFIC AND ARTISTIC RESEARCH.

WE may, we think, assume with some confidence that such meetings as those of the British Association for the Advancement of Science, and the Social Science Congress, are among the most influential and important of those many influences which have for their objects the advancement of science, and the making better the whole world of human nature. Such institutions seek in the main to do this by the ventilation of questions, and the diffusion of special information among the general public. A paper read at any such institution attracts attention, and is attentively listened to, and afterwards read by thousands who would not perhaps have otherwise cared to hear much on such subjects, important as they are. The "public" is thus admitted into the circle of scientific theory, and even of art theory at times.

But there is another aspect in which such institutions may be usefully viewed, and it is a strictly scientific one, and one which will some day no doubt occupy a large share of the attention of those who manage these matters, viz.,—the very advance of science, and, to speak generally, sociology as influenced by science, and to discover how to do this, and how to find out and best encourage those who are most fitted to do the work of enlarging the boundaries of such important influences, and how most effectively to help those who are best fitted by nature to pry into, and to get a true and original insight into the ever new details of them.

Indeed, it would seem to be a something somewhat strange that this phase of these associations' work does not stand first, and come before all other subjects as successfully taken in hand, and urged on the attention of the scientific world. The advancement of science and the endowment of science are, indeed, as it is, watchwords of them, and would seem at first sight to be their constant and ever-recurring themes; but, nevertheless, these subjects are as yet new, and the problems involved unsolved, especially if we go a little, ever so little, into the heart of the matter, and come to foundational principles. What is the great object of the future of scientific advance, and progress, and increased insight? What, but the practical application of it, and the shortest way to it? How new the matter is we may soon see.

In the first place, science (and we would add art) has already made a certain advance, and the world is at this moment at a certain distance from its stand-point, in the days of, say Copernicus, 1543. Newton did wonders with and for science, that is certain, and had he never existed, it is equally sure that science would not be where it now is. We might be even waiting for a Newton to solve the "gravitation" mystery for us, and the world might even now be wondering as to how it is that the very earth we live on is held to its central sun. It is a very curious fact that Newton, though he discovered, as by dint of a sort of divine instinct, the law of gravity as the universal force, or "energy," if that be a better word, as that power which holds the earth and planets to the sun, had no further notion of the (and it seemed to satisfy his mind) origin of the second force, or energy, which impressed on them their forward motion, and which now carries them perpetually round the central mass, or rather round their common centre of gravity, than that of a personal and individual effort. We glance at this for the purpose simply of showing how comparatively little it is that even the mightiest intelligences can do within the compass of the but too short period of human existence! We might go on and cite all but numberless instances of this slow progress of "research," and how little it is that any one man, however able, can do, and the consequent necessity there is, and must be, of many in succession to such work,—the warring with nature, and the compelling her to reveal her dark and hidden secrets. It is but a few that would seem to be gifted with the power of doing such work, and they, for the most part, have to labour under no small,—and to not a few hardly to be understood,—difficulties. If we but follow the great workmen of the past, who have done so much for the present and future, into their observatories and laboratories, and workshops and studios, we must see this.

And this brings us to practical matters, for had not many of those who have "advanced science" been aided and helped in some way or other, they could have accomplished but very little indeed, or nothing. Even Newton himself could not have done his life's work without some sort of "endowment," and could have had no time to work out such, commercially looked at, unprofitable problems. Newton may be said to have been a singularly fortunate man, for he got that help or endowment which effectually enabled him to do his work. As things were, he must at times have been hard driven, for there are details to be found by the curious in his life which show that he had need to go somewhat deeply into other calculations besides those which fill the "Principia." Yet was Newton a singularly fortunate man, taking all things into account. His immortal book itself would never have been printed had not help, and money help, too, been at the right time forthcoming. Indeed, may it not be affirmed generally that no man can possibly live on pure abstract or theoretical science? He works for the future.

Thus it would be difficult to exaggerate the

importance of this question of help to those who so devote themselves to the future of science, and thus, though the world may not know it, to the practical and material well-being of the community at large. Nothing can at first sight seem more profitless than some of the scientific speculations, and even experiments, of to-day, though the especial characteristics of the times be so practical and utilitarian in their tendency; yet, but few at all capable of judging will doubt of their effect finally on practical action. It is not a little instructive,—and at times the fact is all but incredible,—to think of how much, all the world over, has been done to change the very face of it, by thoughtful men doing that which at the moment seems utterly profitless!

It is impossible, therefore, taking such considerations as these into account, to over-estimate the importance of the "endowment," in some form or other, of science; or, the helping the purely scientific engineer and searcher into the hitherto-undiscovered and the unknown. The only question is, how best to do this, and how to select those who are most fitted for such difficult and exceptional work? Nature does her work in strange ways, and the mysteries of the unknown are spelt out by those only to whom it has been given to do such work, and in ways the most unexpected. Not, most surely, out of orthodox schools, or colleges, or societies, but from the outer world, and as if by accident. Would it not, therefore, be the best and the most sure of all tests of worthiness to receive such help, to demand in the first place of all applicants for it a previous result; *e.g.*, a newly-discovered fact, an invention already realised, and to be seen and examined; or, a work to be read in MS.? Would not such tests as these prove the capacity and worth, scientifically, of the applicants? Would it not make certain, as certain as is humanly possible, the capacity of production of yet further work from any such applicant? No men are less idle, as a rule, than those of original or inherent power of any kind. All experience proves this. They cannot, if they would, prevent the continuous flow of original thought. Newton, had he lived to the patriarchal age of Moses, with his natural force unabated, would have gone on making discoveries instinctively, and almost as a matter of necessity.

And it is this fact, and fact it is, that compels us to a real and trustworthy mode of advancing science. Elementary schools of science, more advanced colleges,—to do that for science which Oxford and Cambridge now do for learning, to use a general term,—would, doubtless, do much good, and fill up a want, and an urgent want. But great and very profoundly original research, and discovery, and insight into the unknown, do not come from schools and colleges. No amount of "education" will elicit originality of thought or mental insight. A schoolmaster must always know far more than his pupils whom he is teaching, but no one expects from him deeper insight than is to be found in the books before him, and out of which he instructs. Nay, the very tendency of his mind is to reject anything he does not find in them, come from what source it may.

May not these thoughts and facts be utilised by such institutions as those of the British Association for the Advancement of Science, the Royal Society, the Institution of Civil Engineers, and others? Each strives for the same object,—a new and workable idea in some one definite direction, and with the ultimate object of making the condition, in the long run, of humanity better than it is. Each one of them is in search of those who can best aid in this, and who are most gifted. But, as matters are at present, the "outside" world is all but excluded from this kindly and timely help; for the real test of fitness, as above hinted at, has not been applied. May we not hope that in future it will have its due attention, and that those who have already manifested original power will be helped by these powerful societies?

And may we not here usefully put in a plea for *art* "research" help? For surely there is not in science, difficult as it is, more yet to be found out, or to be practically tested, than there is in art action and theory. As all know, there are not a few art-societies, from the Royal Academy itself, with its exceptional privileges and patronage and helps, to the newest and humblest of art associations; but yet is there a need of a something more to do the special work of research into what exists, and into what has been done, and to suggest what there is yet to do, and *how* best to set about it. This is, as all will admit, a sufficiently wide field to work in, and it is certainly a most unprofitable one as far as the immediate present is concerned. The more profound and difficult the research, the further it must be from immediate apprehension, and most surely, however suggestive it may be of immediate action, the more difficult is the position, especially of the first discoverer. The history of science is but a long-drawn-out list of difficulties as each great discovery came into the world, if only in thought and idea. Indeed, we hardly know how any society in these our days could do a better or more noble work than to help and welcome all new scientific or artistic thought. We again say artistic, because this has not as yet come into the category, and because the fact of a right method of work, as in art-workmanship, must come primarily from some at the time abstract, and apparently unworkable, and all but useless and purposeless speculation. Art most certainly is as full as science of examples of this.

## ARTICLES DE PARIS.

A CUSTOM has existed in Paris, from what is carelessly called "time immemorial," of exhibiting at this season of the year such a profusion of *articles de Paris* as happily no other city in the world can display.

Every one knows that the New Year in Paris is made more than anywhere else an occasion for the interchange of presents, many of which, it is cynically said, are given with a somewhat more complex motive than the rustic donor of a "fairing" dreams of. We have long heard of costly gifts of the morning being exchanged in the afternoon for its equivalent in some other shape, again to be exchanged, and so on, until it arrives at its value *at par*, or, say, a half-franc box of M. Menier's chocolate drops.

The popular market for New Year's gifts in Paris has for many years been allowed, from the 15th of December to the 15th of January, to be arranged in light booths, erected along the boulevards; but the larger tradesmen appear this year to be so greedy for custom, and so alive to the old traditions of the wisdom of looking after small gains, that the ephemeral lessee of a New Year's booth finds it exceedingly hard to undersell his magnificent competitor.

In a recent return of that great French branch of industry, known as *articles de Paris*, a very serious falling off has been noticed, to the no little amazement and alarm of the egotistical manufacturer of such products, who naturally takes a very serious view of his playful trade, and is utterly at a loss to understand the diminished demand for his costly vulgarities. He has no conception that there may exist a gradually growing dislike for objects that many of us once thought desirable possessions, but which no longer charm us.

Men have been known to assert their objection to matrimony on the ground that marriage would embarrass them with so many preliminary bridal gifts selected from the shops of Paris, that without calculating the additional cares ill-natured people say are likely to accompany the more complicated existence, their lives would be rendered miserable by the daily contemplation of the unanimated ornamental part of their household.

Not that the manufacturer of *articles de Paris* concerns himself greatly as to what may be the opinion of people of good taste: he seeks, and is much better satisfied with, a broader field of enterprise, and he knows very well that it yet will be many a day before the whole purchasing world knows exactly the safe way to invest its sovereigns, its dollars, and its rupees; so he still goes on making year after year, and this year more than ever, hideous things to shock the thoughtful, to delight our neighbours' wives and daughters, and to encourage our children in a love for bright, breakable, ill-formed trifles.

These remarks apply, not to the ordinary toys of the season, which perhaps we ought to rejoice to find multiplying for our dear little one's sakes, but to the expensive *bonbonnières*, to design which the manufacturer appears to have utilised the ingenuity of madmen, who have manipulated objects that their insufficient minds just give them the power of knowing will be appreciated by their fellows, and hence just now the shops are filled with objects so expensive and ugly, that one really feels enraged with the manufacturer for entertaining so low an estimate of the taste of, as he thinks, the never-to-be-sufficiently-duped public.

That the sale of the higher objects of *articles de Paris* has fallen off is owing most likely to the melancholy fact that England in a great measure, and other countries in proportion, have found out how to make, and where to sell, such things as affectionate and affluent people give to each other at Christmas and the advent of the New Year; and we are constrained to admit that England is completely successful in producing luxurious objects, many of which in all respects are as faulty as those made by the French.

One requires at this season in Paris, in more than one sense, a heavy balance, to protect one against the dangers of the shops, and the unfortunate individual who has neglected that very useful part of his education which ought to instruct him how to spend money wisely, must be painfully at the mercy of the eager sales-people who this year have surely over-stocked their showy shops with shiny vulgarities.

Such a mass of over-coloured pots and pans have certainly never before been exhibited at one time, and it becomes a matter for curious speculation to calculate what length of time and how wide a distance it will require before the many objects will be dispersed and surrounded by a sufficient amount of sober tones to form an equilibrium of moderately good colour. All the butlers' pantries in the world would be too small to supply shelves for a hundredth portion of the ornamental china that is offered for sale, and many a dusty lumber-room will be made more hideous by having to find space for the last new thing. Breakage, probably, judging by our own domestic experience, accounts for the disappearance of a multitude of these objects, and this suggests to us surprise that the Parisians, who are so determined to gather in Paris so many of the world's wonders, do not attempt to erect, as a pendant to Montmartre, a Monte Testaccio, outside the fortifications of Paris; it might be as large and as useful, strategetically speaking, as Mont Valérien. We could name more than one manufacturer of crockery whose wares would form, if carefully smashed, an admirable substratum for such a mountain, and we should imagine that the present respected minister of the Beaux-Arts would desire no better exercise of his official duties than having to condemn a few thousand ill-formed and badly-decorated pieces of pottery. What are the Legitimists about that they do not attribute all this vulgarity to the Republican influence?

A suspicion exists, which occasionally finds expression, even from patriotic Frenchmen, that art is declining in France, not merely the art of the *bonbonnières*, but the art of the Academy, the Beaux Arts *par excellence*, the art that, commencing with Cousin and Goujon, culminated in Perraud and Meissonier. It is doubted whether the men who now year by year please and amuse us at the *Salon* will ever take the same abiding-place in our memory as the artists of the past have so perfectly done. When two or three living names have passed away, who is to take their place? Probably the next great painter may be a Russian, sending us from his studio at Constantinople the gorgeous representations of an Eastern dream.

*Paris.*

## MOVEMENT IN INDIA.

MR. WILLIAM PARKES, C.E., consulting engineer of the Madras Harbour Works, has arrived at that city on a visit of inspection.

Captain K. C. Pye, R.E., manager of the Rajpootana State Railway, has been appointed to act as secretary to the Indian Railway Conference, which has been summoned to assemble in Calcutta.

Mr. V. Ball, of the Indian Geological Survey, will proceed shortly to Vizagapatam, Jeypore, and Bustar, to make preliminary geological surveys of the countries thereabouts.

Designs for the new Boree Bunder terminus and administrative offices at Bombay have been prepared by Mr. F. W. Stevens, C.E., and have been approved by the local railway authorities. The work, which will cost about twenty-two lakhs of rupees (220,000*l.*), will be commenced as soon as the sanction of the home Board is received.

Colonel Shaw Stewart, R.E., the consulting engineer, Madras, is said to have pronounced decisively against the Duke of Buckingham's grand scheme for uniting Ceylon with South India by means of a railway, his opinion being that the project would entail such an enormous

outlay as to render it prohibitory. The works from land to land, across what is known as Adam's Bridge, would, it is stated, involve an expenditure of two millions sterling, the total outlay being probably three millions.

Property is said to be very rapidly decreasing in value in the Island of Bombay. A native paper gives the following instance:—When the Elphinstone Circle was built, about twelve years ago, a prosperous mercantile firm erected a range of offices, at a cost of 45,000*l*. A few years later, the firm in question amalgamated with the London, Asiatic, and American Company, Limited, and the building was valued at 25,000*l*. The Company named having failed this year, the property was put to the hammer, and only brought 7,300*l*., or less than a sixth of the actual cost.

The Holkar Nerbudda Bridge, which was recently opened, will cost when quite completed 168,600*l*., the outlay up to the beginning of October having been 166,000*l*. This is nearly 40,000*l*. under the estimate, and the officers of the Public Works Department concerned in its construction are congratulating themselves accordingly.

It has been finally decided that Simla is not to be deserted after all, but that the vice-regal quarters are to be removed to more commodious premises. The Simla paper speaks of "a palace" which is to be built on Observatory-hill, for the accommodation of the representative of the Empress of India.

The new scheme for the revision of the Public Works Department in Bengal, the North-Western Provinces, and the Punjab is now ready, and will, it is said, come into operation at the beginning of the year. There are at present twenty-three Executive Divisions of the Public Works in Lower Bengal alone, and six Superintending Engineers, exclusive of those in the Irrigation Branch, which is to be amalgamated with the general department. It is intended to reduce the number of Divisions to eleven and that of the Superintending Engineers to three only. The services of several subordinate officers are also likely to be dispensed with.

Colonel Rundall, C.S.I., formerly Inspector-General of Irrigation in India, has prepared an elaborate scheme of canals for Egypt; nothing being wanted but the money to carry it into effect. Should he take service with the Khédive, it is said he is to receive Indian pay and allowances and a residence in Cairo,—but rumour has surely erred for once on the side of moderation, for Egyptian appointments are usually rewarded in a much more substantial manner.

Active preparations are being made for extending the frontier railways of India in those directions whence danger most frequently threatens. A party consisting of Captain Wilberforce Clark, Messrs. Derienzi, Fox, and others is under orders to start from Kurrachee to survey a new line from Sukkur to the Bolan Pass.

There is a prospect of considerable briskness in the building trade in Colombo for some time to come. A company has been formed, with a capital of 100,000*l*., for the purpose of purchasing a plot of land and erecting thereon ranges of buildings which will be fitted with the most modern machinery and appliances for the preparation and packing of coffee for shipment.

It may be remembered that at the last meeting of the British Association, the Duke of Argyll suggested that the Government of India should erect a new observatory where solar investigations of the utmost importance could be conducted. Coming from an ex-Secretary of State, the suggestion has naturally excited much attention throughout India, and popular opinion is most decidedly against it. The *Englishman* gives voice to the general sentiment, and proposes that the Madras Observatory, which has done much good work, should be extended, and provided with improved instruments and the requisite number of trained assistants to keep the present really talented Astronomer Royal, Mr. Pogson, abreast of the demands of modern astronomy, and to render his researches and discoveries at once available by the scientific world. If funds can be procured it is not improbable that this may be done, but the Delhi assemblage will cost much money which is sorely begrudged, and, unless pressure is brought to bear upon it, the Government of India will be in no haste to extend its efforts in this direction.

At a public meeting held in Madras, Mr. Parkes has been defending himself against the strictures which have been passed upon his breakwater. He declares both its progress and its prospects satisfactory, and says he foresaw, from the outset, many of the difficulties which have been experienced in carrying out the work, especially that of driving the piers through the surf, and as far as the accumulation of silting sand is concerned, expressed himself convinced that, "at the very worst, the work would be good for fifty or sixty years, and at the end of that period the further extension of the piers for the prevention of further injury would be practicable." He stated that the work had been undertaken departmentally, not because contractors would not look at it; but because he himself was strongly opposed to giving out contracts for such work, and pointed to Sir John Coode as sharing his opinions, and as executing the Colombo breakwater without the assistance of a contractor; while, as far as cost was concerned, he declared himself more than satisfied. His critics, however, still maintain that more than half a million sterling is a ridiculous price to pay for a harbour which may only be available for fifty years.

## HOW WE TRAVEL.

FIFTY-ONE years ago, when the railway system was in its earliest infancy, passenger traffic was scarcely dreamt of, and the far-sighted Quakers who projected the first public railway would have thought it a wild dream if they had been told that two or three millions of persons would travel by railway in a generation or two. But the traffic which was overlooked in the projection of the primal railway has grown until it is the most important, and until it has attained almost inconceivable dimensions. In the year 1875, whilst our British railways had conveyed over them two hundred million tons of goods and minerals, there were in the same space of time passed over them above five hundred million passengers; or, in other words, our railways carried rather more than one thousand passengers every minute throughout the whole of that year. This, roughly speaking, was the number of the ordinary passengers, of whose journeys the tickets issued are accurate records. In addition to them, there are the season ticket-holders, no account of the exact number of whose journeys can be given. These numbers were for year 1875, and the statistics are now obtainable, if not of the whole, at any rate of the chief, of the companies in England for the first half of the past year. And it may be interesting to tabulate from official records the numbers travelling on six of our largest English railways during the first six months of the past year, and to show by the division of these travellers in what modes and classes the journeys of the travelling public are accomplished. The six railways in question are the London and North-Western, the Great Western, the Midland, the North-Eastern, the Lancashire and Yorkshire, and the Great Northern; and it is a proof of the vastness of their working to find that over these six railways alone there were carried in six months ninety-four million passengers. The exact figures are for the six months:—

| | |
|---|---|
| London and North-Western ... | 21,584,740 |
| Great Western ..... | 21,132,464 |
| Midland ..... | 12,351,722 |
| North-Eastern ..... | 13,533,287 |
| Lancashire and Yorkshire ..... | 17,535,265 |
| Great Northern ..... | 8,500,398 |
| | 94,637,876 |

The interesting question then arises,—how and in what proportion, in reference to the classes, do these 94,000,000 representative passengers travel? A question which may be answered by a detailed table for the same period of six months as under:—

| | First Class. | Second Class. | Third Class. |
|---|---|---|---|
| London and North-Western ..... | 1,575,430 | 2,788,132 | 17,221,178 |
| Great Western ..... | 1,407,800 | 4,102,765 | 15,621,899 |
| Midland ..... | 1,237,940 | — | 11,113,782 |
| North-Eastern ..... | 568,401 | 945,049 | 12,019,837 |
| Lancashire and Yorkshire ..... | 1,182,585 | 1,356,036 | 14,996,644 |
| Great Northern ..... | 598,124 | 1,270,451 | 6,331,823 |
| Total ..... | 6,560,280 | 10,472,423 | 77,305,163 |

Thus it is evident that out of rather over 94,000,000 of passengers, 6,500,000 travel first class, nearly 10,500,000 travel second class, and the great bulk of the whole, above 77,000,000, travel by the popular third class. Within the last five years not only has there been a vast accession to the ranks of the travelling public, but there has been an increased tendency towards the lower classes, or rather towards the third class. In that period there has been a very slight increase in the number of the first-class travellers, an actual decrease in the number of the second-class passengers, and a very large increase in the number of the third-class passengers,—this movement being largely contributed to by the attachment of third-class carriages to all trains, and by the later movement of the Midland Railway Company in the abolition of second class. The result is now discernible in the fact that on the six chief railways of England, where six persons travel first class, and ten second class, seventy-seven travel third class. The above table reveals the fact that there is a difference in the proportion; thus the Great Northern carries only half as many passengers as the North-Eastern, but it has more first-class passengers; and the Great Western, with fewer passengers than the London and North-Western, has fewer first class, but a very much greater number of second-class travellers. It may be added, too, that from all the above the number of season-ticket holders is excluded, but since the extension of the issue of season-tickets to the third class, the tendency of travel known amongst ordinary ticket-holders is also evinced here.

Another interesting series of tables might be drawn, showing the railway receipts from the various classes of traffic, and without giving in detail the statistics for the whole of the companies above named, we select two illustrative companies, and give them as under, the figures being for the same period of six months:—

| | First Class. | Second Class. | Third Class. |
|---|---|---|---|
| | £ | £ | £ |
| London and North-Western | 322,667 | 239,825 | 1,328,321 |
| Great Northern ..... | 105,249 | 82,710 | 467,853 |

And although, as before, there are differences of detail, the principle is as stated,—the great bulk of the receipts being drawn from the third class, the first class contributing from a fourth to a seventh of the whole, the second class yielding from a fourth to a ninth of the gross receipts, and the remainder being contributed by the third class. In the case of all companies we have named, the first-class traffic was stationary or declining during the last half-year, as compared with previous corresponding periods; in every case, with one exception, the second class shows a decreasing yield comparatively, and the increase on every line is given; or the decrease in the traffic is lessened by the results of the working of the third-class traffic.

## EXHIBITORS AND PATENTEES AT THE EXHIBITION OF 1878.

INTENDING exhibitors at the Paris Exhibition of 1878 will be glad to hear that it is officially announced that a committee is about to be formed for the purpose of considering the many complicated and vexatious legal difficulties connected with the rights of patents, not only of Frenchmen, but of foreigners.

In reviving the law of the 23rd of May, 1868, the Government has wished to protect, in an efficacious manner, the artistic, literary, and industrial property of the objects sent to the Exhibition; but how delicate and difficult are the questions which the application of special legislation raises with regard to patents and trade-marks, generally so badly understood even by those directly interested. And would there not be room for fear, if these latter had not at their disposition the disinterested counsels of a number of men accustomed to deal with questions of this nature, that the exhibitors would be at the mercy of unscrupulous men of business, who would speculate without fear on the ignorance of strangers only slightly acquainted with French manners, customs, or even the language?

At the Vienna Exhibition an international congress was formed to study these grave questions. Every one must feel of what importance would be, from the point of view even of the perfecting of the protective laws of international property, the creation, under the auspices of the French Government, of a committee composed of eminent men, whose opinions, acknowledged by all the inventors who will come to the Exhibition of 1878, would form a precious collection, and would settle many vexed points of jurisprudence.

But in the protection of works of the intelligence, the securities to be assured to material interests must not be lost sight of. The general regulations contain no dispositions relative to insurance against fire and other accidents; on this point all liberty is left to the exhibitors, who are in no way obliged to submit to any obligation other than the observation of the rules of the police. These considerations suffice to show all the services which can be rendered, either to the State or to the public, by the institution of a committee, combining jurists versed in the study of comparative industrial legislations, engineers familiarised with questions of industrial property and a certain number of representatives of commerce. Such a committee will be in the best condition to organise a gratuitous service of authorised information, capable of serving as a guide to exhibitors and manufacturing capitalists, or their representatives in Paris.

M. Krantz is somewhat embarrassed by the official communication from Germany that the Government intends to take no part in the forthcoming Exhibition, and as many German manufacturers are very desirous to be exhibitors, their applications for space fail in reaching any appointed authorities, as it is now very generally understood that all communications relating to the Exhibition must be made through the commissioners, royal or otherwise, that the Governments of the world have long since appointed. This difficulty with regard to Germany will probably be overcome by application for space going through some friendly source, which practically will give those Germans who have anything worth showing the opportunity they desire; but it is to be regretted, perhaps, that the usual paraphernalia and consequence of a commission, with its costly attributes, will not take a conspicuous place in Paris in 1878.

## ARCHITECTURAL NOTES, BY AN IGNORAMUS.

### THE REIGN OF THE POINTED ARCH.

IN considering Mediæval styles of architecture, it is natural to direct one's attention chiefly to the ecclesiastical examples, these being far more abundant and magnificent than the secular remains existing, and exercising also a far more powerful effect on the imagination. The only exceptions to this are to be found in the Town-halls of Italy and the Netherlands, memorials of the municipal grandeur which was attained at an early epoch of Modern European history, and, most important of all, in our own Windsor Castle. We do not forget the ruined castles of France, Germany, and the British Islands; but the military style is now completely obsolete, unlike the Ecclesiastical, which has taken a fresh start, and retains as strong a hold on the popular taste in the nineteenth century as at any former period. One of the features of the subject which has the most enigmatic aspect in any extended study of it, is the sudden appearance of similar designs about the same time in countries widely removed from each other. This, however, is explained at once if we consider the universal presence and wide-spread ramifications of the Romish Church system, and the constant intercourse which was maintained by the clergy of even the outlying parts of Europe with Italy and the intervening countries of the Continent. There is no reason to doubt that, at least, until the later period of the Middle Ages, clerical architects had the field to themselves. So Gundulf, bishop of Rochester, designed the White Tower in London, and his own cathedral on the banks of the Medway. So Archbishop Lanfranc, besides the churches of Caen, designed or restored that of Canterbury, which the Conquest had laid in ruins, and the four easternmost arches of the nave of St. Alban's, which are probably the very earliest architectural work (excepting William's Castles) attempted in England after the Conquest, and may at once be distinguished from the others by the rudeness of their architecture. They were erected about 1070. So Wykeham, 300 years afterwards, was the architect of Winchester Cathedral and Windsor Castle.

The origin of the pointed arch has been a fruitful theme of controversy. I shall content myself with observing that the most probable theory seems to me that which supposes it to have arisen from the intersection of two round arches, which at once gives us the First Pointed style. Examples of this mode of construction have been found in the remains of the early Assyrian buildings, though so rare that they might seem accidental. There is no evidence that it was ever much employed until the Saracen Arabs in the seventh century established their domination in Syria and Egypt, and introduced it in their mosques, of which a few are known to have been erected before the year 1000. The date and circumstances of its introduction into Western Europe were for long the standing puzzle of architectural writers; but steady and persistent research has gradually cleared away the mystery. I doubt whether there is any earlier example in France than the cathedral of Bayeux, which, having been ruined by fire, was restored by King Henry I. in 1106 and subsequent years.* The nave of this church presents a beautiful First Pointed triforium and clear-story, surmounting a ground-tier of round arches richly moulded, which is supposed to form part of the original edifice. The choir is Pointed throughout, of slightly later style, and the effect of the whole so satisfactory as to be surpassed by very few mediæval churches, in spite of the modern lantern which disfigures the junction of the nave and choir. With regard to England, no difficulty could ever have existed, if our architectural writers had been acquainted with the testimony of William of Malmesbury, who, in an invaluable passage of his "Gesta Pontificum Angliæ," written about the year 1120, speaks of the new style of church-building as coming rapidly into use,—"*Novus ille et speciosus modus ædificandi ecclesias.*" Nothing more distinct or definite could be wished for, since the words can only be explained of the Pointed style. This of itself goes far to show (taken in connexion with the date of Bayeux, which is ascertained from the records) that the new method was not the invention of Western European architects, but was introduced by the clergy who had accompanied the first crusading host to Palestine, and had seen the architecture of the Saracens. The Latin kingdom of Jerusalem was founded by the year 1100, and from that period the intercourse of the Occidentals with Syria was constant.

If, however, we are required to point to actually existing specimens of the twelfth-century Pointed, these will be found to be very few in number in our own country at least. Basel, in Switzerland, and Angers, in France, are admirable examples of the very earliest type, which in the English books is generally called Transition Norman, the point, at the intersection of the jambs of the arch, being just perceptible. Both may be confidently assigned to the early part of the twelfth century, and they present a striking example of that coincidence of design to which reference is made above, the low massive arcade, with its widely-splayed and plainly-moulded supporting piers, being the most conspicuous feature in each. To these may be added Magdeburg, in Prussia, of which a very charming feature is the number of busts of saints and heroes with which the arches and pillars are adorned. A more decided type of the Pointed style is found in the grand basilica of Notre Dame in Paris, and in St. Germain l'Auxerrois, which date from a later period of the century. In England, the choir of Chichester, erected in the last decade of the twelfth century, and the rotunda of the Temple Church in London, are the correlatives of this style. But the finest examples,—as Salisbury and Lincoln,—were not reared until the thirteenth century. We need not be surprised at this paucity of surviving examples, for the process of alteration and remodelling the edifices was seldom intermitted, until the Reformation came and introduced a new state of things. The great majority of the churches, for two centuries after the Conquest, continued to be built in the Round-arched or Romanesque style. Thus the nave of Norwich, which may be regarded as unique, from its triforium being loftier than the ground tier, and thus forming the principal feature of the interior, though the effect produced can hardly be recommended as very happy, was completed by the year 1135, and rebuilt as we now see it towards the end of the fourteenth century. In the twelfth, no more pronounced example of the Pointed style can be mentioned than the choir of Glasgow Cathedral, which was finished by 1189. This we know from the fact that it was erected by Bishop Josceline, the date of whose death is given by the Chronicle of Melrose, which affectionately eulogises the munificence with which he adorned his cathedral. It is, therefore, probably the earliest example of the true Pointed style in Britain.

Here I may be permitted to suggest that the commonly adopted classification of ecclesiastical Gothic into First, Second, and Third Pointed, or Perpendicular, is inaccurate. The two latter are certainly not identical. York Minster, of which by far the greater portion undoubtedly belongs to the fourteenth century, is not more decidedly Pointed than Glasgow Cathedral. If it is described as Second Pointed, and Decorated,—and it always is so,—how are we to describe Cologne and Amiens, in which we see the culminating glories of the Pointed style, and Westminster Abbey, which was built after the model of the latter? Evidently these are the true Third Pointed, and the Perpendicular, of which England possesses a monopoly, marks the unhappy period when Gothic architecture ran to seed. There is, in fact, no such thing as an exact classification of style by date, though it is so often pretended that the style of a building will enable you at once to assign its date. Amiens was erected, in a few years' time, in the middle of the thirteenth century, and Westminster immediately afterwards; York Minster, though nearly a century later, exhibits a far earlier phase of the Pointed style.

In comparing our insular Gothic with the Continental style, the truest of Britons can discover but scant cause of exultation. The absence of correct proportion in our great churches, arising from their miserable lowness as compared with their length and breadth, is their most defective feature. The central part of the nave of York is about 20 ft. wider than that of Amiens, yet the former is only 95 ft. high, whilst the latter is 150 ft.* To give anything like the effect of true proportion, the nave of York ought to be at least 130 ft. high. It must be confessed that French architects sometimes soared into extravagance. Beauvais, of which only the choir was ever completed, is 170 ft., and the excessive height is as painfully disproportionate as the excessive lowness. Throwing back the head at the risk of dislocating the neck, we vainly strive to obtain a satisfactory view of the vaulted roof. Another matter in which our Mediæval architects were lamentably defective was window-tracery. Of the true flowing style, or the Flamboyant, as the French call it, we can hardly be said to have any old examples at all.

The roof is a feature which has lately been fully treated in the columns of the *Builder*. In Continental churches it is sometimes so overdone as absolutely to dwarf the substructure. Conspicuous examples of this are St. Stephen's in Vienna, and Notre Dame in Amiens. In the latter case, the interior arrangement is a great curiosity. Ascending to the top of the stone vault, more than 150 ft. above the floor of the church, we find a perfect forest of timber, disposed in tripods and double tripods, propping the roof-beams. The present leaden covering is not older than the early part of last century. I hold firmly to the doctrine that the only becoming cover for any important church is the old flagstone roofs. Not only is it the sole covering which harmonises with the fabric, but it is much cheaper than lead, which is continually getting out of order, and it offers a guarantee against destruction by fire,—the sure fate of every building to which plumbers obtain access.

* We do not bind ourselves to admit all our correspondent's dates.

* 141 French feet; but the French foot is five-sixths of an inch longer than the English.

## THE CHURCHES OF WISBY, GOTLAND.

AT a meeting of the Architectural Society of the Archdeaconries of Northampton and Oakham, on the 11th ult. (already briefly noticed in the *Builder*), Sir Henry Dryden gave an account of a visit to the churches of Wisby, Gotland. Sir Henry explained that it was about the year 1000 that Gotland became important on account of the commerce introduced into it. About the period that Wisby became important, Lubeck began to look up, and when Lubeck became important, it made a league with Hamburg and also with Wisby, and this, Sir Henry said, accounted for the Hanseatic League. The Swedes appeared to have become commercial at a much earlier period than the Danes and Norsemen. The latter occupied themselves with plundering, but the Swedes were not quite so bad, and taking up this part of Sweden, the commerce came into Wisby. The earliest date given, curiously enough, was the date recorded for three of the churches, viz., 1046, the latest date being 1200. Wisby was not more than a mile long, and not much more than a quarter of a mile broad. There were originally

eighteen churches, of which eleven now remained, ten within the town and one outside. First, Sir Henry briefly dealt with St. Nicolaus Church, which was founded in 1097, but the greater part of which was fourteenth-century work, although there were considerable portions of early work to be found mixed up with the other. It was a monastic church, and there are old houses remaining on the south, and cloisters on the north. It was upwards of 195 ft. in length, and in speaking of this church, Sir Henry Dryden explained that a great deal of beautiful marble was used in all the churches, this being a natural feature of the island of Gotland. Amongst other architectural points of the church of St. Nicolaus, the lecturer said it had a long nave and two aisles, but no tower. Of St. Maria, founded in 1190, the greater part remained. This was the only perfect church, but very curiously it was unsymmetrical. It consists of nave, aisles, western tower, and two other small towers at the junction of the chancel, and then a very short chancel, square-ended. It was 171 ft. 6 in. in extent. The whole foundation of the church was as in 1190, with the addition of a very small rich ante-chapel. There were no peculiarities that Sir Henry knew of in the mouldings, and they would get the same in England. Almost all the early doors in Wisby above the capitals had continued what was very nearly the same form—nothing more or less than the carrying up above the arch the mouldings that they had got below. He would like to know if any one had seen such a thing elsewhere. The abacus did not run along the front of the arch, but was stopped off sideways, and he should like information upon that. The church of St. Gertrude was 61 ft. 3 in., and was built by the inhabitants of the Netherlands, where St. Gertrude was very much venerated. This is the smallest of all the churches, but is semicircular inside, and has square ends outside. That is a peculiarity upon which he should be glad to have information. The only places that he knew of were St. Margaret's Chapel in Edinburgh, and he thought at Romsey Abbey, and something like it in Germany. He should like to hear of any other instances that could be given. The church of Heligands, or the Church of the Holy Ghost, was a very peculiar church, 83 ft. in extent. It was singular from the fact of being octagonal in plan. There was no church exactly like it. Like some churches in Germany, it had the peculiarity of being double. In the vault of the lower church was an aperture about 7 ft. wide, communicating between the upper church and the lower church. The upper church was vaulted also. The roof was united by a lot of gables running into a centre. St. Clemens (145 ft. in extent) was the only one out of all the churches that inclined northward from true east. St. Clemens was a very common form. It consisted of a nave and two aisles. St. Hodolph was very much [ruined indeed. It consisted of a nave and two aisles, and a chancel with western tower, but only part of the western tower remained. The next church was St. Drotten, founded in 1086. Drotten means the Lord, and the explanation given was that it is equivalent to Christ's church,—the Lord's church. It consists of a nave, two aisles, and western tower, and a chancel with apse, the latter being semicircular. The length of St. Drotten is 118 ft. The next church, St. Lawrence, was one he should like information about. It was a church of very different form to any he had ever seen anywhere. It was a cross church, only the angles are filled up with a sort of aisles, and there are just four pillars. He should have told them that all these churches were vaulted. Never were there such people for vaulting. So good and so hard was the stone, however, that the vaults had not pushed the walls out. The church of St. Lawrence is vaulted in four divisions, and its total length is 104 ft. The church of St. Catharina was a Franciscan church, and he thought it rather singular that he did not recollect coming across a Franciscan church in England. This particular church consisted of nave, two aisles, and had a western tower. It was the most complicated church of all those in Wisby, having been altered and re-altered. This church has the only crypt in Wisby, and has a three-cornered apse like St. Nicolaus. St. Hans was a church which neither he nor anybody else could make out the shape of. He should presume it had a tower on the north side of the nave. On the north was probably some chamber or other, and on the south side of the nave some very large vaulted chambers. It must have been one of the largest churches in the whole island. That, said Sir Henry, completed the whole of the ten churches in the town, and they came to the very curious church outside, built by the Russians, called St. Goran. This church had a bisective nave, and in that respect it was like the churches of Hannington in Northamptonshire, Cathorpe (Lincolnshire), and a church in Kent. Sir Henry humorously remarked on a partition arrangement in the church of St. Goran, by which the people entered by two ways, and said at first he thought this was to prevent the men and women from fighting. He remembered, however, that this was an hospital church. The church had many odd points about it, and was a very interesting edifice. There was no single church in Wisby that was regular. A peculiarity of the doors in Wisby was afforded in the fact that they generally carved the capital that came above the shaft, and left uncarved the capital that came above the jamb; and another singular thing was that the round doors had flat tympans.

## THE MANCHESTER CORPORATION SANITARY WORKS.

THE members of the Manchester Town Council have recently inspected the various works established by the health committee during the past few years in Oldham-road and Water-street. The establishment is a comparatively new one, having been started within the past four or five years. It is pretty generally known that the council have decided to supplant the midden system, which has up to the present generally prevailed, with what is best known as the box and pan system, and the new plan is being now carried out at the rate of 200 per week. Of course, the change necessitates a vast amount of labour. The necessary appliances,—that is to say, a wood frame, requiring some considerable construction, and the pans, have to be made, one for each closet. The work of making the cinder-sifters is carried out at the Oldham-road yard, where workshops have been erected and fitted with machinery which, in a great measure, has been designed by Mr. Whiley. In addition to the workshops, there are also in the yard a mortuary, more especially designed to receive the remains of persons dying in common lodging-houses or in the streets. In another part of the yard are disinfecting ovens. An important work carried on at the Oldham-road yard is the making of mortar from the refuse obtained from ashpits, from which, before it is brought to the mortar-mill, all objectionable matter has been removed. The cost of material is little, or next to nothing. From the collections from the ashpits sufficient cinders are obtained to supply about a score of furnaces with fuel, and at these works and those in Water-street to propel engines to the united strength of 140-horse power. No less than about 250 tons of mortar are made during a week. Another work carried on at the Oldham-yard road is the manufacture of disinfecting powder.

At the more extensive works which the health committee have established in Water-street, mortar, disinfecting powder, patent manure, and various other commodities are produced from the refuse of ashpits, slaughter-houses, and other similar places. The committee are, by the introduction of machinery and appliances, enabled to deal with the matter as it is brought to the yard, and now there is seldom to be seen more than a few loads of rubbish on the premises; while a few years ago it was (according to the *Manchester Courier*) not an unusual thing to see 20,000 tons of refuse lying in the yard at one time waiting to be put through the process. While the members of the council were at the works several of the night-soil vans arrived, and supplied a most forcible reason for an attempt to destroy the nuisance* as quickly and as effectually as possible. It is estimated that there are about 44,000 closets within the area under the jurisdiction of the Health Committee, and the amount of material collected each week is over 3,000 tons. It may be mentioned in connexion with the new system that the saving in fuel by the adoption of the cinder-sifter is said to range between 6d. and 1s. per week per house. An analysis of the 3,000 tons of material which every week is collected by the servants of the Health Committee gives one ton of paper, three tons of rags, two tons of dead animals, 17 tons of stable manure, 33 tons of old tin and iron, 60 tons of refuse from slaughter-houses and fish-shops, 80 tons of broken glass, pots, and bottles; 100 tons of vegetable refuse, old door-mats, floor-cloths, and straw mattresses; 1,230 tons of fine ashes, and 1,400 tons of cinders.

* Formerly referred to in the *Builder*.

The committee employ, in order to deal with this large amount of material, a staff of 500 workmen, including men in various branches of trade; and there are also about 130 horses and vehicles used. Some idea of the work which the committee undertake may be formed when it is stated that during the year ending with last August 7,000 closets were re-constructed on the cinder-sifting system, making with those previously completed, a total of 24,000, and leaving about 18,000 of the old middens still to be altered. From the old-fashioned middens 111,534 tons of nightsoil were carted, of which 63,581 tons were taken to the tips. From the 24,000 new closets 48,607 tons of refuse were removed; and from slaughter-houses, fishmongers', and tripedressers' premises, 3,275 tons. These figures show an increase of 16,131 tons over the total quantity removed in the previous year, and of 32,461 tons over the quantity in years 1873–4. There are now 66 vans employed in conveying the contents of "receptacle closets" to the Water-street depôt. The 48,607 tons taken there in the course of last year were made up as follows:—Excrementitious and liquid matter, 34,000 tons; rubbish, 14,587 tons. The material taken from both old and new closets is removed from the city within twenty-four hours. Of the total quantity taken from the closets, 63,775 tons were sent into Lancashire and Cheshire by boats; 2,960 tons by the Lancashire and Yorkshire Railway into the East Riding of Yorkshire, and 8,564 tons by the Manchester, Sheffield, and Lincolnshire Railway into the North Riding, and into East Cheshire; 7,269 tons were removed from the yard by market gardeners and farmers, 1,119 tons were converted into "concentrated manure," 7,425 tons made into mortar, and 6,240 tons used as fuel or reduced in the furnaces to 2,000 tons. The 2,000 tons of material which passed through the furnaces, together with fragments of broken bottles, &c., were made, with the proper proportion of lime, into mortar, of which 9,000 tons have been sold. The refuse of which the mortar is made was formerly carted to the tips at a cost of not less than 1s. 6d. per ton.

During the year there have been constructed at Water-street eight "carbonisers," one "double destructor," and one "concretor." By means of the carbonisers 15 cwt. per hour of refuse undergoes a process of reduction, and as they are working 144 hours per week, 108 tons are weekly reduced to 47 tons, consisting of 21 tons 14 cwt. of fine charcoal, and 25 tons 6 cwt. of rough material,—broken glass, crockery, iron. One ton 3 cwt. per hour can be burned in the "destructor," and as the apparatus is also at work 144 hours per week, 165 tons of the rubbish are weekly reduced to 41 tons. The increase in the quantity of refuse to be dealt with appears to be about 16,000 tons per annum. From 700 to 800 men are employed on the various works in the department, and the committee possess 140 horses, 106 railway wagons, and 150 other vehicles.

## HALIFAX GRAMMAR SCHOOL COMPETITION.

THIS competition, which was advertised in our columns a few weeks ago, has been decided. The first place has been given to Messrs. Leeming & Leeming, motto, "Pecksniff"; while Messrs. Jackson & Fox, distinguishing mark, "Portcullis on a Shield," receive the second premium, 20*l.*; and Mr. R. Horsfall, motto, "Elizabeth Regina," the third premium, 10*l.* All the above gentlemen are of Halifax. The circumstances of this competition are of the usual unsatisfactory description. The governors appear to have had hazy ideas of their requirements, and issued somewhat vague conditions, which must have sorely troubled the competitors. Thirty-six designs were sent in. There was a sort of understanding that professional assistance was to be obtained in examining the designs, but this was not done, and the awards have been hastened to a conclusion in an almost indecent manner. The committee of selection, on receiving the designs, proceeded to lay down more definite conditions for their own guidance: these ought to have formed part of the instructions, as a very small number of the designs happened to comply with them. The number was then rapidly reduced, and the final award made. We cannot, of course, question the decision, and must presume that it has been for the best, but cannot help regarding it as singular that all the awards are made to local architects. The designs are not to be exhibited, and so the matter ends.

## NEW PULPITS.

*Salisbury.*—The new pulpit in St. Thomas's Church, Salisbury, is completed. It was designed by Mr. G. E. Street, R.A., and executed by Mr. Earp. It is of Caen stone, the steps being of Portland stone. It stands on a massive base, is hexagonal on plan, and corresponds in style with the architecture of the church.

*Southampton.*—To complete the restoration at St. Lawrence's Church, Southampton, a Bath-stone pulpit has been erected to replace the old wood structure, which was of meagre design. The new pulpit is octagonal on plan, with base and pedestal. At each angle of the octagon are three-quarter columns with moulded caps and bases, the interspaces being sunk, moulded, and perforated, with cusped heads and sunk spandrels, above which is a frieze and heavily moulded cornice. The pulpit-desk is of stone, moulded, and enriched with carving. It is approached from the chancel floor by Portland stone steps. The pulpit was executed by Messrs. Dacombe Brothers, from a design prepared by Mr. J. O. Parmenter, architect, Southampton.

## NEW BARRACKS.

*Taunton.*—Taunton barracks are to be enlarged, in view of the 34th depôt brigade being stationed there. The cost of the proposed alterations is estimated at 30,000*l.*

*Northampton.* — Northampton having been fixed upon as one of the new military centres, the work of building new barracks adjacent to the old cavalry barracks, which are also being altered, for the permanent location there of troops of the line, has progressed rapidly of late. The old drill-ground in the rear of the quarters which face the Barrack-road has undergone a great change. On each side and across the lower part extensive blocks of buildings have been erected, still leaving a large quadrangle as an exercise-ground. Passing by the old officers' quarters, a large and imposing block of buildings has been erected for the accommodation of 120 privates and four sergeants. At right angles to this building are two blocks for the accommodation of thirty-one married soldiers, each of whom will have a separate living-room, bedroom, and a kitchen and scullery combined. The bedroom doors open to a corridor, common to all, which is reached by a flight of stone steps. The soldiers' wives have not been forgotten, for abutting upon George's-street is a new laundry, which will be fitted up with every convenience. Crossing the quadrangle in a diagonal direction to the north side, the visitor comes in front of the sergeants' mess. This is a much smaller block, consisting of a large mess-room, with larder and store-room, together with a large kitchen fitted up with a well-furnished range and boiler; and a scullery, with racks, sink, and all the necessary requisites for such an establishment. At the opposite end of the building is a reading-room and library, with recreation-room close at hand, as well as a bar where coffee and refreshments will be served. The buildings also include store-rooms for bedding materials, &c., on the north side, the building of a new guard-room in the front, with the conversion of the old one and a stable into offices, and the remodelling of the canteen. These complete the whole of the new works included in the contract of Mr. Loveday, of Kibworth, which is upwards of 14,000*l.* There still remain the old cavalry or artillery barracks, and the contract for the alteration of these, at a cost of about 3,000*l.*, was taken by Mr. Ireson, of Northampton. Gas and water will be laid into the whole of the buildings, and the total cost, ultimately, will not be less than 20,000*l.* The works are being carried out by Major Lempriere, R.E., who has intrusted the continuous personal supervision of them to his deputy, Mr. R. Beevor, of the Royal Engineer department.

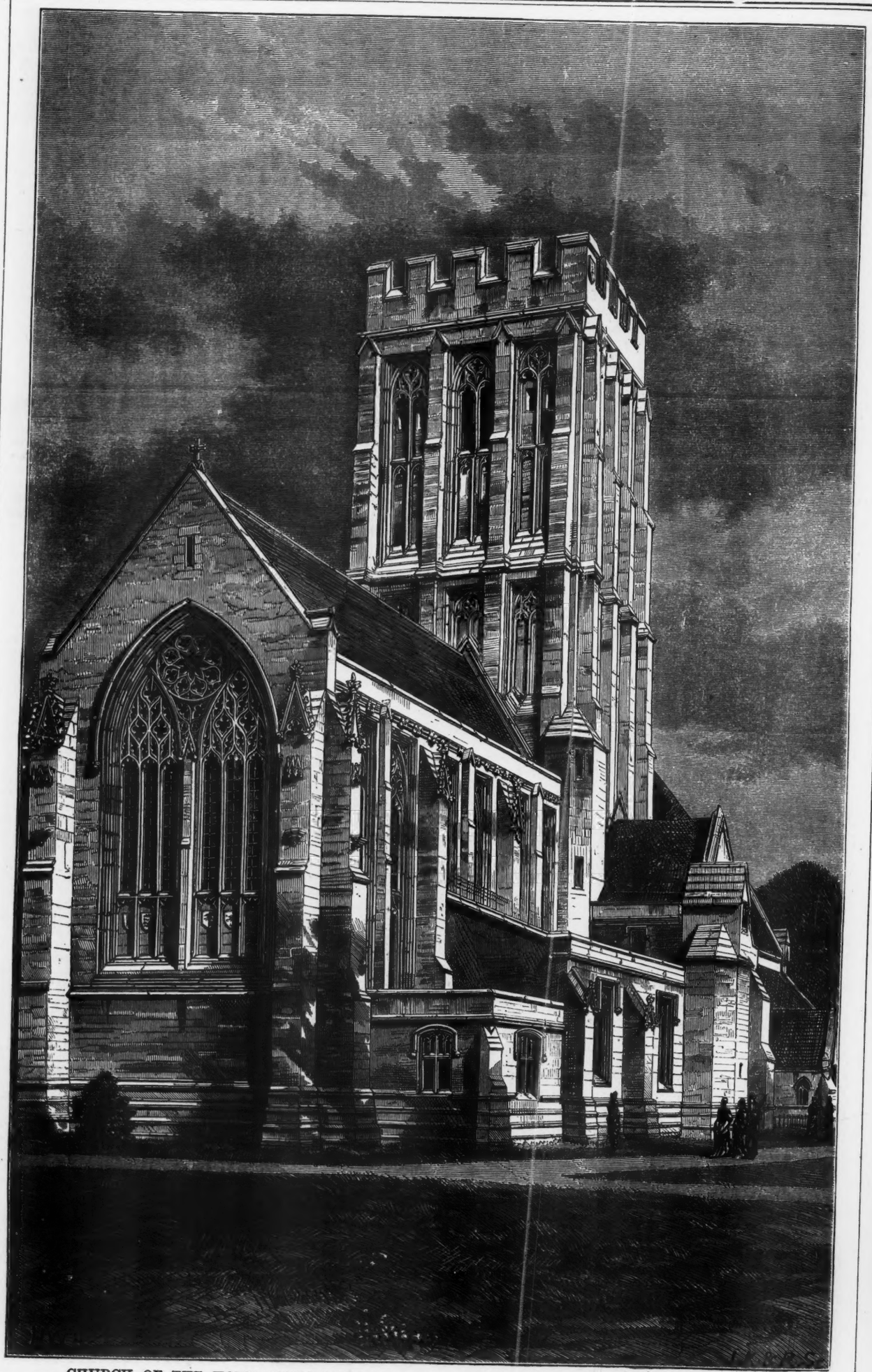
**The Richmond Water Supply.**—Owing to the threat of the Southwark and Vauxhall Water Company to cut off their supply to Richmond unless terms were come to by the 13th inst., increased exertions have been made by the Richmond Water Supply Committee (the Select Vestry) to protect the town against such a calamity, and in a circular issued by their direction to the inhabitants they say that, although the artesian well at the parish water-works is not yet completed, the committee have made arrangements to furnish from their existing artesian well and other sources, an ample supply of pure water on moderate terms.

## CHURCH OF THE HOLY ANGELS, HOAR CROSS.

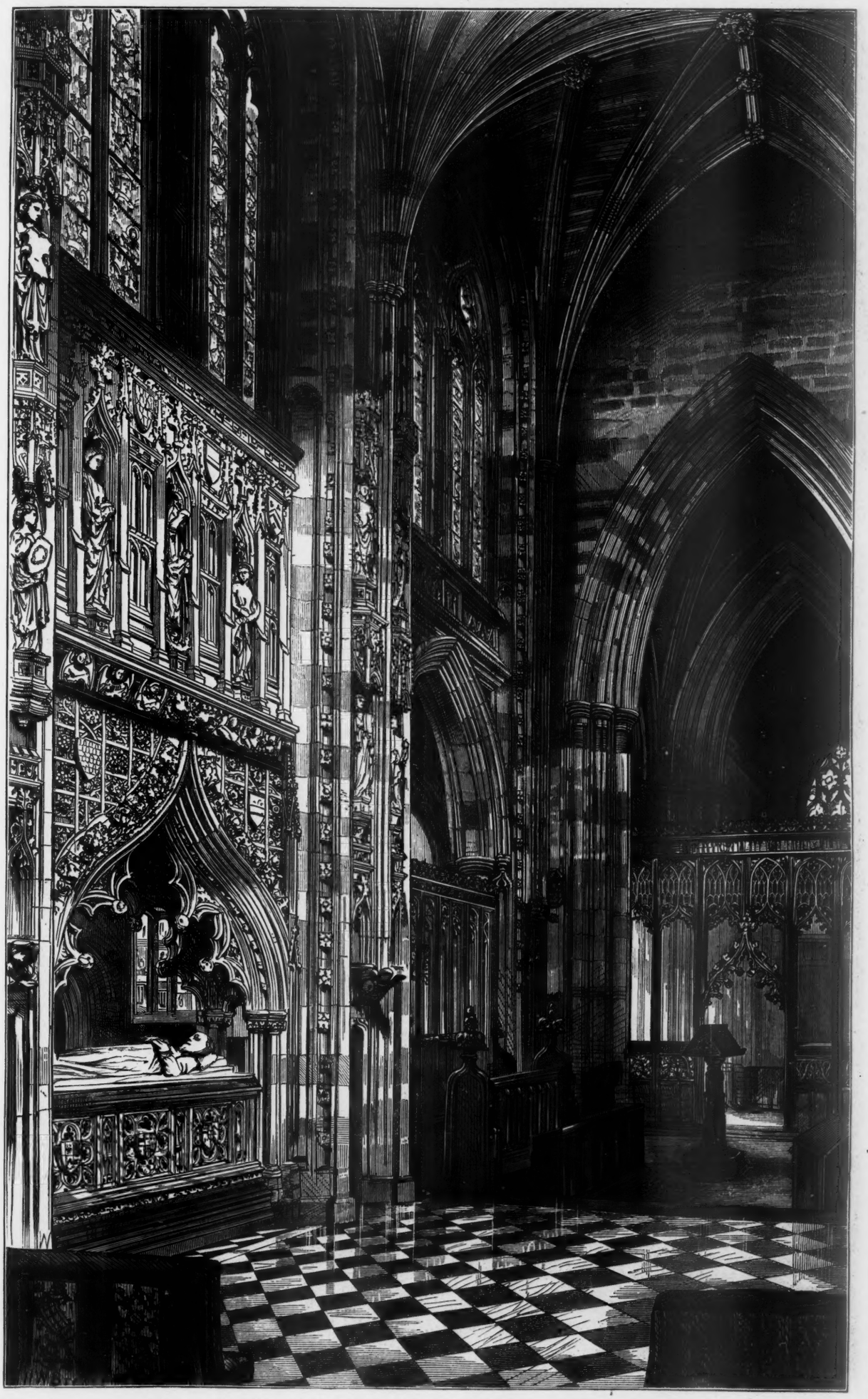
HOAR CROSS is a small hamlet in the parish of Yoxall, in Staffordshire, about eight miles from Burton-on-Trent, and ten from Lichfield; it is pleasantly situated upon the top of one of a range of hills. A few years ago it consisted simply of a rambling old house called "The Hall," and one or two cottages belonging to the dependents of the Meynell family.

In a field adjoining the house, which is called the Chapel Croft, the foundations of an ancient building have been found. This, together with the name Chapel Croft, has led to the supposition that a small church or chapel originally stood on this spot. Some few years ago the late Mr. Hugo Meynell Ingram determined to make Hoar Cross, which had formerly served as a kind of shooting and hunting lodge, into a country residence. Finding the old hall too modest an edifice for the purpose, he commenced the new hall, which is a stately mansion in the Elizabethan style of architecture, from the designs of Mr. Henry Clutton. Mr. Hugo Meynell Ingram did not live to see the completion of his house. The church which is the subject of this notice was commenced four years ago by Mrs. Meynell Ingram, as a memorial of her husband. It is situated upon a plot of ground adjoining the gardens of the new hall, and is one of the most sumptuous and carefully carried out churches of modern times. It is constructed entirely of red stone, chiefly from Alton and Runcorn, both within and without; it is all worked in ashlar. It consists of a lofty choir, flanked by a chantry-chapel on the south and sacristies on the north side; a massive central tower; transepts; and a short nave with aisles. There are porches both to the north and south aisles of the nave. The choir has a lofty clearstory, and is considerably higher than the nave and transepts; in fact, the idea of the architect has evidently been to revive one of the small minster churches of the Middle Ages, like Broadwater or Poynings in Sussex, Shottesbrook in Berkshire, or Jackley, near Oxford, and this idea is carried out through the whole building. Thus the choir is considerably longer than the nave, and is treated in a much more elaborate manner. It is also vaulted in stone; while the remaining portions of the church, with the exception of the tower and south porches, are covered with timber roofs. The interior of the church is very striking, and the massiveness and solidity of its construction, together with the rich warm colour of the stone, gave it quite the effect of an old building. The design, however, especially that of the chancel, shows much originality. The nave is separated from the aisles by two richly-moulded arches on either side. The roof is rather simple in design, but is constructed entirely of oak. Four very massive arches, resting upon moulded piers, support the central tower, which is vaulted in stone. The transepts have roofs of similar character to the nave. The choir is internally divided into three bays, and is richly vaulted. The clear-story is lighted by six large windows, and the vaulting shafts are filled with canopied niches and panelling. The great east window is of six lights, with rich tracery. The central mullion is very broad, and is ornamented with a series of small niches, with figures on its inner face, and externally with panelling. The western bay of the choir has an elaborately moulded arch on either side: that on the south side opening into the chantry chapel, and that on the north into an aisle extending the length of two bays, and forming a choir-vestry, and organ-chamber, which is very elaborately treated, the case being arranged as an architectural composition, enclosing the instrument after the manner of the ancient organ-cases existing at old Radnor Church in Wales, Strasburg Cathedral, St. Anne's at Augsburg, and Nordlegen in Germany, and the cathedral of Amiens and Perpignan in France. The opposite side of this bay is occupied by the monument to Mr. Hugo Meynell-Ingram. It consists of an altar-tomb of alabaster, panelled, and bearing a marble effigy, by Mr. Woolner, of the late Mr. Meynell-Ingram. This is placed beneath a richly-cusped and carved ogee arch, flanked by pinnacled buttresses; above is a cornice, composed of angels holding scrolls; and over this again three canopied niches, divided by panelling, and containing statues of angels, St. Michael being in the centre niche. The spandrels over the archway are filled in with diaper patterns, composed of the leaves and flowers of the rose. A double row of canopied niches, filled with statuettes of angels, holding emblems of the Passion, sacred monograms, &c., form a kind of border to this architectural composition, and give it an effect somewhat similar to that produced by the monument of Henry V., at Westminster Abbey. There is to be an ornamented iron grill in front of this monument. The most eastward bay of the choir is raised two steps above the rest, and has a carved sedilia on the south side, and an arcade on the north. The east end forms a very elaborate termination to this choir. The east window is set high up within a deeply-moulded arch, with niches running round its soffit, and below this is a reredos, composed of small niches, divided from each other by delicate pierced tracery and pinnacled buttresses The portion over the altar is enclosed within a square, in the centre of which a cross is formed by the spaces between the niches, and upon this a metal cross, with enamelled emblems, is fixed. The niches enclosed within this square space are filled with figures of the four Archangels, St. Michael, St. Gabriel, St. Raphael, and St. Uriel, and angels holding emblems of the Eucharist. The figures throughout the whole church are very good in design. Opposite the south entrance is an especially good figure of St. Michael, holding the scales. Outside this square space are eight niches, treated in rather a bolder style, holding statues of the fathers of the Church,—St. George, St. David, St. Andrew, St. Patrick, St. Chad, and St. Augustine of England. The altar, or communion-table, is of oak, covered by rich antependia of silk and velvet. The choir-stalls are all carved in oak, as are also the very elaborate rood-screen and side-screens to the choir. The chantry chapel is entered from the south transept, through a richly-moulded arch, in which is an oak screen, composed of mouldings and tracery of delicate workmanship, and from the chancel, by a small doorway pierced through one of the choir-piers, the choir and altar are visible from the chantry chapel, through the archway, over the monument, and also through a large hagioscope, pierced through the first pier from the east, The font is of stone, and is placed near the west end of the church; it is eventually to be furnished with a lofty canopied cover. The pulpit is of oak, and is movable. The porches are provided with stone benches; that on the south side is vaulted and arcaded in a very ornamented style. There is a great deal of rich stained glass in the church; all the choir windows, and the three west windows of the chantry chapel, are filled with figure subjects, and all the other windows in the building have ornamental patterns in their traceries. The windows on the north and south sides of the sanctuary contain figures of the four fathers of the west, and the four fathers of the east. This glass was all executed by Messrs. Burlison & Grylls, under the superintendence of the architects of the church, Messrs. Bodley & Garner, of South-square, Gray's-inn. The whole building was carried out without a contract, and no builder was employed. Some portions of the work, especially the choir, are of such an elaborate description, and the detail is so varied, that it would have been next to impossible to have carried it out by contract. In fact, the whole of the works have been executed under the personal supervision of the architects, assisted by their able clerk of the works, Mr. Peed. The church has been entirely built at the expense of the Hon. Mrs. Meynell Ingram. The style is English Gothic, of the fourteenth century,—a local type has been followed. The church was opened by the Bishop of Lichfield last Easter.

**An Overcrowded Workhouse.**—The *Staffordshire Advertiser* says:—"After having spent in mending the Old Workhouse as much as would build a new one, the guardians at Wolverhampton have been fairly warned that such a system of false economy must cease. The indictment of the representative of the Local Government Board against the bundle of ill-jointed edifices called 'the Wolverhampton Workhouse' is a heavy one. We are told, 'It is difficult to imagine a collection of buildings less fitted for their purpose, or which offend more seriously against all established laws of health;' that 'the ventilation of the whole of the buildings is defective;' and that 'there is not a foot of space available within the walls on which it would be safe to build; the buildings are pushed to the very verge of the limits of the ground on which the workhouse stands, and children, imbeciles, and sick are packed together in a way that does not appear to me to be defensible.'"



CHURCH OF THE HOLY ANGELS, HOAR CROSS.—EXTERIOR, FROM THE NORTH-EAST.



CHURCH OF THE HOLY ANGELS, HOAR CROSS, STAFFORDSHIRE.—MESSRS. BODLEY & GARNER, ARCHITECTS.

## THE COTTAGE HOMES OF ENGLAND FROM A SOCIAL POINT OF VIEW.*

HAVING pointed out some of the difficulties under which the cottages in the outlying districts labour in comparison with those situated nearer to the "house," I propose now to inquire into the reasons why the homes of the latter prove more attractive to the passer-by and more engaging to the visitor. This, I believe, may be clearly traced to natural causes.

Every lord of the manor is desirous that the cottages near his mansion shall be in keeping with it, and present an attractive appearance. They are in the full view of his visitors as well as being always under his own eyes, and anything bordering upon a hovel would not, of course, be tolerated in such a conspicuous part of his estate. They are purposely designed to lend an additional charm to the manor, and to gratify the senses of the wealthy proprietor and his numerous guests. The gardens must be tastefully laid out and neatly trimmed. There must be nothing to offend the eye, and everything must be scrupulously clean. Any neglect of these provisions is sufficient to draw down upon the head of the offender a vigorous rebuke, either from himself, or his agent who generally resides in the village.

The inhabitants of these villages themselves show signs of this supervision. In their character and general deportment its influence is plainly to be seen. There is but little slouching; every effort is made to look tidy; all seem to be more on the alert than the outsiders, and lack the careless look so peculiar to them. The result of this close inspection is to make the cottagers take a pride in the external appearance of their cottages, and vie with each other in wholesome rivalry. It is customary for the minister to call upon them frequently, and when the family is at home they are subject to visits from squire and ladies. Never knowing when they may expect any visitors, they labour to keep their homes as neat as they possibly can, so as to be prepared for any emergency. Their rooms, with simple furniture neatly arranged, with blinds and curtains of snowy whiteness, are rendered charming by the mere additions of potted flowers in the windows, and a few cut flowers arranged prettily on the table. They show what can be done, with limited means, towards beautifying a home, if persons are so disposed.

Many of these cottage homes of England would put to shame numbers of more pretentious dwellings. How cheerful, too, when the evening is gently overshadowing all things, and lofty trees intensify the settling gloom, to see the cottagers, who have given over their gardening, collect in groups, and indulge in a pleasant chat before they go in doors!

There may be heard occasionally the snatch of a song, or the sound of some musical instrument, while the supper is being prepared; but sound after sound gradually dies away, and by an early hour,—

> "Sleep and oblivion
> Reign over all."

This is equally true of cottages situated in the vicinity of convents. Under adverse circumstances (by this expression I mean the remoteness from villages or towns previously alluded to, with the disadvantages accompanying such seclusion), it is remarkable how clean,—how exceptionally clean,—are the humble cottages, and how tidy and cheerful are their inmates.

This is also owing to the constant visiting, for which they have to be prepared; tending to remind them that, although shut out from intercourse with the many, it is necessary to win and retain the approbation of the few, and in no other way can this be done so effectually as by uniformly presenting a prepossessing appearance and an orderly home. Their world is but a little one, it is true; but then it is kind and appreciative.

Very different is the lot of the poor isolated cottagers. It is theirs to plod on from one week to another without any ray of hope or prospect of comfort to throw a spell upon their toil. Before the sun rises, they must needs be stirring, and when they return to their cottage what enjoyment is *there* for them? Whilst the husband has been at a distance in the fields, his wife has been hurriedly going through some of the duties entailed by a family, and this, with her own labour in the fields, leaves but very little time, if any, for the adornment of the person or the improvement of the cottage.

If the wife were a most cleanly woman, she would have some difficulty in investing such an abode with an air of cleanliness, and if, by dint of unremitting labour, she succeeded in transforming it, what reward would she receive for so doing? Would it be appreciated? And by whom? With the dawn, man, wife, and children are away, and not till evening do they return. What matters it to them whether it is clean or dirty? It is but a place to sleep in, and with it they are content. It will answer their purpose, for being reared in similar ones they have no thoughts beyond.

When wives do *not* accompany their husbands to work, the cottages are not particularly striking either for tidiness or cleanliness. It would seem as if life had no attraction for them, and that such things as comeliness and cleanliness were but vanities—things to be dispensed with, and in no way relating to them. They may do for those who are better housed, for those who possess greater advantages, and are brought under the notice of observant eyes. Who notices them? Who visits them? What is the inducement held out to them to do differently? Week after week, year after year, their lives pass by in one dull unvarying round of toil, and they unconsciously acquire that vacant, listless look which tells that isolation from their fellows has crushed their spirits, and made them careless of themselves and their homes.

The cleanest persons, under such disheartening circumstances, must eventually lose their self-esteem, and grow unconcerned about the appearance of their homes.

It would be well if the system of visiting could be more extensively adopted.

Its advantages have been pointed out in the case of the village, and it would not only have a beneficial effect in stimulating the cottagers to take a pride in their homes, and have them always fit to receive a visitor, but it would also make them feel that there are some persons who take an interest in their welfare, and are desirous of improving their lot.

The lord of the manor, when at home, occasionally visits some of his cottagers a little distance away, and if he were but to extend his visits to the outskirts of his estate, and speak a few words of kindness to the cottagers there, they would have their effect, whilst the state of their cottages would appeal to him so powerfully on their behalf that the process of improving his estate would be materially forwarded.

The real state of these cottages is, unfortunately, not revealed to him by his agent, and hence they remain to cumber the ground, and keep the tastes and feelings of the cottagers at the lowest possible point.

Sometimes an ardent minister will do his best to visit them, but when the cottages are scattered over a wide area his visits necessarily resemble those of angels.

Religion is generally admitted to exert an influence at once exalting and tending to promote industry and cleanliness. Few, however, can read, and being situated miles away from the church, how can they attend it when roads are bad, rivulets are swollen, and pouring rain or winter's storms increase the difficulties.

What opportunities do they possess for learning its precepts or for feeling its influence?

Since, then, the squire and the minister, the only existing means of reaching the homes of all these poor cottagers, signally fail to do so, it is necessary to adopt one of two alternative schemes for the improvement of the social status of these cottagers.

One way of reaching their homes and kindling their interest in them is by appointing an agent to inspect them frequently, and give a report upon the state of the cottages as regards dilapidations, and upon the appearance of the interior of the dwellings as regards cleanliness, and the habits of the cottagers. Particulars as to the number of persons in the family should also be given in order to counteract the evils of overcrowding, which can be remedied only by transferring the tenants to larger and more commodious cottages.

Especial care should be devoted to the description of the sanitary appliances to each cottage.

In some, perhaps in most, of these secluded cottages, this last description would be a very meagre one. The sanitary requirements would be best learned by giving a truthful account of the miserable shifts the cottagers have had to make for the purpose of preserving some slight regard for decency. This frequent inspection could not fail to call the attention of the cottagers to their shortcomings, and to create a certain amount of pride in their domestic affairs, which would, by casual approbation, rapidly develope into a genuine liking for tidiness for its own sake.

These reports would also benefit them by bringing the state of their dwellings under the notice of the lord of the manor, and would constantly remind him of what he owes to the poor, and in many cases would speedily effect a change in their lot, for if the state of their dwellings were thus laid before him, it could not be that he would turn a deaf ear to such disclosures.

The poor cottager has as much right to a substantial, comfortable house as any other man, whatever his position may be. Very often his dwelling stands to him as part payment for his labour. All labour is noble, and its recompense should be commensurate. If, then, his cottage forms part of such recompense, he is justified in asking for a cottage worthy of the name, and for those conveniences which are absolutely essential to its proper working.

It may be that some would object to this inspection, and would regard it as being inquisitorial, although persons seldom object to what is likely to prove advantageous to them. It is quite open to an owner of property to have his houses inspected periodically, but whether his cottagers would take kindly to frequent visits made by his agent, partly to notice themselves, is questionable; for Englishmen of every grade possess in the depths of their nature a feeling of independence that ill-brooks any interference with their homes and liberties. That independence has asserted itself wherever the English race has worked its way, and in conjunction with their resolute will, has left its marks indelibly graven upon events that have passed.

It would still be open for him to insist upon having the cottages inspected, but if umbrage were once taken, the scheme would be defeated, for no improvement would be made by the cottagers, and things would remain in very much the same state, whilst an element of discord would have been introduced, of which there are not wanting those who would make the most.

If the subject were properly represented to them, and they were induced to see that these inspections were made for their welfare, and would tend to their advantage, it would soon be found that a perfect understanding existed between cottagers and agent, and oftentimes, in cases of sickness, his report would be the means of furnishing the sufferers with nourishing food and little delicacies.

The alternative scheme is to pull down the hovels, and build cottages in blocks (each cottage possessing its w.c., ash-pit, and other conveniences), and these cottages should be situated near the residence of the farmer for whom the tenants work.

By building cottages thus, the spirit of emulation would be introduced here also; and, under the farmer's supervision, cottages might soon be seen that would vie, in point of cleanliness, with those in the village at headquarters; but as the inhabitants of the latter chiefly consist of mechanics and gardeners engaged upon the estate, they enjoy larger incomes, and may consequently be regarded as the "Upper Ten." It would not, therefore, be reasonable to expect in the present instance so much furniture or so many little ornaments.

One point to be observed in designing these cottages is to provide as much sleeping accommodation as possible.

This scheme would be the more costly at first, owing to the expense of erecting new cottages, sinking wells, and other work required to make them tenantable; but when the cost of keeping the old huts in a proper state of repair is taken into consideration, it will be found cheaper in the end to pull them down, and replace them with substantial cottages; and, even if it should be otherwise, would a landowner grudge the outlay when he viewed the cheerful faces of a happy and contented tenantry?

THOMAS BALES.

* See vol. xxxiv., p. 1245.

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**"Steeple Jack" in Forres.**—A few days ago a good deal of attention was excited by the appearance of "Steeple Jack," of the firm of Goodchild, Moir, & Co., Dundee, on the summit of the lofty chimney-stalk recently erected at the woollen manufactory at Forres, to which he affixed one of his firm's patent lightning conductors. The operator adopted the usual method of flying a kite over the summit of the stalk and affixing stronger ropes to the string, and met with complete success.

## TIME CONDITIONS IN CONTRACTS.

IT is a curious but natural consequence of the great competition in all kinds of business how singularly careless of ultimate results it makes those who are the most eager for immediate success. This fact is never more observable than in the conditions to be found in many important contracts for the execution of buildings and other similar works. No doubt this incaution also arises from a certain speculative trustfulness in good luck or in good nature. "It is remarkable," a judge observed in a recent case, "in how many of these contracts [to do certain work], which certainly seem one-sided, one party puts himself in the power of another; but people are content to enter upon work or contracts of this description because they rely that the person named will not give them orders that they cannot do." No doubt in some cases it may happen that these one-sided contracts do not turn out to be injurious, but in many others persons must regret the exceeding and foolish confidence which they have placed in circumstances or men. It is necessary, therefore, to point out what may sound almost a truism, that those who enter into contracts should be prepared for the most improbable contingencies, and should in no case, for the sake of gaining a contract, permit one-sided conditions to be inserted which they may afterwards bitterly regret. Some instances of stringent conditions will most clearly bring before the reader the true merits of this question. Thus, if a contract is to be performed by a certain period, and the contractors (we use this word in its technical and non-legal sense), be they builders or what not, allow a clause to be inserted, that in the event of any alterations being directed to be made they will duly execute and complete the works by the same time and in the same manner as if the additions and alterations were originally in the contract, then they must finish them by the stipulated time. It may be absolutely impossible, but, nevertheless, it must be done, or the penalties for the non-performance will be incurred. This actually occurred in a well-known legal case (Jones *v.* St. John's College, Oxford, 6 Law Reports, Queen's Bench, 115) decided in 1870. We need not go at length into the facts, which were an enlargement of the amount of work and no corresponding increase of time for performance, in respect of certain farm buildings. "It may be," said Mr. Justice Hannen, "an unwise contract to enter into, and certainly if a person does in direct terms enter into a contract to perform an impossibility he will not be excused because it is an impossibility." We will, therefore, only recommend too-eager builders to ponder this instructive case. The most apparently advantageous contract saddled with such conditions may turn out to be the most undesirable in its consequences. On the other hand, the courts of law are as lenient as they can be under these circumstances, and it is now more or less settled that if a contract is to be performed by a certain time, and this time is extended, very stringent conditions as to forfeiture of money due and of tools do not apply to the extended contract. Of course, this must depend to some extent upon the actual words of the contract. But, nevertheless, contractors should be most careful not to incur this great liability, otherwise their original contract may turn out a loss instead of a gain. The clause is a usual one. Should the contractor fail to proceed in the execution of the works in the manner and at the rate of progress required by the engineer, then come the severe penalties. But, as we have already pointed out, this only applies to the first period at which the contract is to be completed, and not to that at which a new or enlarged one must end. A very good instance of this will be found in a case decided in the present year, which further exemplifies one of the most frequent hindrances to the fulfilment of time contracts, namely, the idleness or refusal to work of the workmen employed (Walker *v.* The London and North-Western Railway Company, 45 *Law Journal*, Common Pleas, 787). The clause in question had reference, the Court considered, to a reasonable time under the original circumstances, and not under the fresh ones. At the same time it by no means follows that this case would be upheld in a Court of Appeal,* for, since a definite date was fixed for the completion of the original and of the extended time, it is difficult to see why the company's engineer should not be as capable a judge of a reasonable time under the second as well as under the first contract. This doubt upon the judgment in this case renders the proposition at the commencement of this article all the more necessary to be well thought over, because, in the instance we have given, most penal consequences would result from the non-performance of the works at the rate of progress desired by the company.

The law will not take pity upon foolish contractors, and if they agree to do work by a certain time the law will not relieve them either from heavy penalties or from severe conditions, however one-sided.

* As this article passes through the press this case has come before the Court of Appeal, who have remitted it to the arbitrator to state a new fact.

## CARRIAGES IN ASIA.

A SERIES of lectures on the History of the Art of Coach-building, by Mr. G. A. Thrupp, has been delivered at the Society of Arts. In the course of the first of them the lecturer said:—We will now speak of carriages used in Asia. In Hindostan are a great number of vehicles of native build. It has been frequently remarked that there is little change in the Eastern fashions, that tools and workmen are precisely as they were a thousand years ago, and the work they produce is precisely the same. In examining, therefore, what is done now by Indian coachbuilders, we are probably noticing carriages of a similar, if not identical, sort with those in use 3,000 years ago. The commonest cart in Hindostan is called "hackery" by Europeans; it is on two wheels, with a high axle-tree-bed, and a long platform, frequently made of two bamboos, which join in front and form the pole, to which two oxen are yoked; the whole length is united by smaller pieces of bamboo tied together, not nailed. In France, 200 years ago, there was a similar cart, but the main beams terminated in front in shafts; in neither the cart of India nor of France were there any sides or ends; the French cart is called "Haquet;" it is probable that the French, who were in India as well as ourselves, may have given the term "hackery" to the native cart, which was so like their own. The native name, however, is "Gharry." Other carts have sides made by stakes driven into the side-beams; the wheels are sometimes of solid wood, or even of stone. Wheels are also made by a plank with rounded ends, and two felloes fitted on to complete the circle. Again, wheels are made like ours, and also with six or eight spokes, which are placed in pairs, each pair close to and parallel with one another. If a carriage for the rich is required, the under-works are like those of a cart, but the pole is carefully padded and ornamented with handsome cloths or velvet; the sides of the body are railed or carved, and the top is of a very ornamental character, similar to the howdah of state that is placed on an elephant. It has a domed roof, supported upon four pillars, with curtains to the back and sides. The passengers ride cross-legged under the dome, on pillows. The driver sits on the pole, which is broad at the butt-end, and he is screened from the heat by a cloth which is fastened to the dome roof and supported upon two stakes, which point outwards from the body. A variety of different-shaped native vehicles may be seen in elaborate models in the India Museum, at South Kensington; although they do not show much originality in design or beauty of execution, and are said to be really creaking and lumbering affairs. When the Hindoos wished for a four-wheeled vehicle, the plan appears to have been to hook on one two-wheel behind another, connecting them with a perch-bolt, and upon the hindermost they placed the body. There is a singular addition to their vehicles outside the wheels; a piece of wood curved to the shape of the wheel is placed above it, frequently supported by two straight uprights from the end of the axle-tree outside the wheel; this acts as a wing or guard to keep any one from falling out of the vehicle, and also the dress of the passengers, from becoming entangled in the wheel. In addition, a long bar of wood, rather longer than the diameter of the wheel, curved in the shape called "Cupid's bow," is fastened to the axle-tree, the linchpin being outside of it, and the ends of the bar tied to the ends of the wing by cords. I imagine it to be placed in order to be a safeguard for the people in crowded streets, who might be pushed by the throng against the wheel. It will be seen in many of the models, and I have seen it also in ancient drawings of Indian and Persian vehicles. Many of the carts, which are designed to carry heavy loads, have a curved rest from 20 in. to 30 in. long attached to the lower-side of the front-end of the pole; this serves not only as a prop whilst the vehicle is being loaded, but, should the oxen trip and fall, it supports the cart, and prevents the load, yoke, and harness from weighing down the poor animals as they struggle to recover themselves. In England we have very few of these humane contrivances; we have, however, short rests to prop up a Hansom-cab when not at work. In India there are several huge unwieldy structures on wheels called "idol cars"; the name of the car of Juggernaut must be familiar to many. The wheels of some of these are enormous blocks of stone shaped and drilled for the work. In the Indian Museum there is a photograph of an idol car from South India, in the district of Chamoondee and the province of Mysore, which deserves examination. The car appears well proportioned, and the ornamental carvings are beautiful in design, and would bear comparison with most European work.

The *Hecca* or *Heka* is a one-horse native car, resembling an Irish car; it consists of a tray for the body, fixed above the wheels on the shafts, and has a canopy roof; the driver sits on the front edge of the tray, and the passenger cross-legged behind him. The *Shampony* is the usual vehicle for women, which resembles the former, but it is larger; the wheels are outside the body, and it is drawn by two bullocks; the canopy roof is furnished with curtains that are drawn all round, and the driver sits on the pole in front of the body. All these native vehicles have wooden axles, which, until recently, I am told, were used without grease, from the prejudices of the people forbidding them to use animal fat. Some used olive oil or soap, but in most large towns there are now regulations obliging the natives to use some substance to avoid the noise and creaking of the dry axles. The commonest carriages in Central India are called "Tongas," but the universal native word for a vehicle is "Gharry." In Calcutta there are several coachbuilders of repute, who employ large numbers of native workmen: Messrs. Dyke employ 600; Messrs. Stewart & Co., 400; and Messrs. Eastman, 300. The men are chiefly Hindoos, and are clever and industrious, but have a singular habit of sitting down at their work. The labourers who have to use grease are all Mahommedans. The wages vary from 6d. to 2s. per day.

## "ENGINEERING IN INDIA."

SIR,—In the interesting article on hydraulic engineering in India, in the *Builder* for December 23rd, 1876, no mention is made of the very fine works executed in Rajputana, towards the end of the seventeenth century, by Rana Raj Sing and his successor Rana Jey Sing. The following account of them is extracted from Tod's "Annals of Rajastan":—

"*Lake Rajsumund.*—This great national work is twenty-five miles north of the capital, Oodipur, and is situated on the declivity of the plain, about two miles from the base of the Aravulli range. A small perennial stream, called the Goomtee, or 'Serpentine,' flowing from the mountains, was arrested in its course, and confined by an immense embankment, made to form the Lake called after himself, Raj Sumund, or Royal Sea. The bund or dam forms an irregular segment of a circle, embracing an extent of nearly three miles, and encircling the waters on every side, except the space between the north-east and north-west fronts. This barrier, which confines a sheet of water of great depth, and about twelve miles in circumference, is entirely of white marble, with a flight of steps of the same material, throughout the extent, from the summit to the water's edge, the whole buttressed by an enormous rampart of earth, which, had the projector lived, would have been planted with trees, to form a promenade. On the south side are the town and fortress built by the Rana, and bearing his name, Rajnugger; and upon the embankment stands the Temple of Kunkeraoli, the shrine of one of the seven forms of Krishna. The whole is ornamented with sculpture of tolerable execution for the age, and a genealogical sketch of the founder's family is inscribed in conspicuous characters. One million, one hundred and fifty thousand pounds sterling, contributed by the Rana, his chiefs, and opulent subjects, was expended on this work, of which the material was the adjacent quarries. But magnificent, costly, and useful as it is, it derives

its chief beauty from the benevolent motive to which it owes its birth: to alleviate the miseries of a starving population, and make their employment conducive to national benefit during one of those awful visitations of famine and pestilence with which these States are sometimes afflicted."

"*Lake Jeysumund.*—His successor, Rana Jey Sing, in spite of his continued warfare with Aurungzebe, completed another lake on a still grander scale. He threw a dam across a break in the mountains,—the channel of an ever-flowing stream, by which he formed the largest lake in India(?), giving it his own name,—'Jeysumund: sea of victory.' Nature had furnished the hint for this undertaking, for there had always existed a considerable volume of water; but the Rana had the merit of uniting these natural buttresses, and creating a little sea from the Dheybur pool, its ancient appellation. The circumference cannot be less than thirty miles, and the benefits to cultivation, especially in respect to the article rice, which requires perpetual irrigation, were great. On this huge rampart he erected a palace for his favourite queen, Comálá-devi, a princess of the Pramara race, familiarly known as the Roota Ranee, or Testy Queen."

I was not able to visit these lakes myself, though residing in the neighbourhood for some weeks, the rains rendering travelling difficult; but I can speak of the beauty of the lake on which the capital of the State of Mewar, Oodipur is situated. Though the lake is only seven miles round, the bund is so lofty that standing with your back to the water you look down on the summits of the mango-trees that form a grove beneath it, into which daylight hardly penetrates. It also is built of white marble, some hundreds of yards long, with a flight of steps its whole length into the lake.

While on this subject, Colonel Dixon's highly successful endeavours to improve the condition of the Mairs, by works of a similar nature, in their country, Mairwara, some thirty years since, ought not to be forgotten.

WILLIAM CARPENTER.

## THE COLOSSEUM.

SIR,—The review in your pages of Mr. Parker's account of the substructures of the Colosseum is so conclusive as to the mistakes he has fallen into, and your suggestions regarding their probable intention are so accurate, that there is little more to be said without a further investigation on the spot. But the light which the French drawings alluded to may throw upon the subject will probably sustain the opinion I expressed in a paper read by me before the British Archæological Society, at Rome, two years ago, when these substructures were being uncovered; and those who are interested in the subject may find in my remarks some assistance in forming an unbiassed opinion.

These substructures may be roughly described as follows:—There is a main passage, along the major axis, connecting the two principal entrances. Along this runs the tramway, with a narrow, raised footpath (of stone) on each side; it entirely fills the central passage, and is evidently intended for heavy weights, with sleepers and long longitudinal ties or rails (all of wood), like a modern work. It was evidently for drawing machinery or cages of animals along. On each side of the main passage there are three or four parallel walls, and outside of these three or four curved walls, conforming to the oval of the amphitheatre. The space within these walls is partly free for passages, and partly occupied by chambers formed by intersecting walls. Looking down upon these substructures from the upper seats of the amphitheatre, the plan is seen to be quite symmetrical. This conformity in dimensions and contour to the amphitheatre surrounding them at once disposes of the view held by some that these buildings are Mediæval, of the time of the Frangipani, when the Colosseum was converted by them into a fortress. The same argument applies to Mr. Parker's view that they are of an earlier date than the rest of the amphitheatre; for they could not have been built in their present form to stand alone, and we hear of no amphitheatre of the size which would be required to enclose them before the time of Vespasian. They are also very roughly put together, and the materials had evidently been previously used for other purposes.

The explanation I gave of the corbels, of which you have given an accurate drawing, was this. Before these substructures were built the whole area used to be flooded for the *naumachiæ*, in which, Dion Cassius tells us, 3,000 men were sometimes engaged. On the same day, we also hear, the water was let off and combats followed. There is reason to think that these combats did not take place on the paved area, but on a platform raised above it, and I suggested that the beams to support the flooring rested upon these corbels, and were supported in the centre by trestles, run in for the purpose. They would be only 12 ft. high, the height of the corbels from the floor. Or the corbels might have been placed to support a gallery. They do not seem to be required for the poles of a velarium; and they show no indication of having been used to support arches, as suggested by the French.

Some years later, after the time of Commodus, the taste for nautical combats must have declined, or it was found necessary to do away with them, to carry out improvements to satisfy the rage for combats of men and wild beasts. It was then that these substructures were built. As the wooden contrivances for supporting the arena would now be superseded by walls, it was possible to raise the level of the arena, so that the spectators would have a nearer view of the combats, and we find, accordingly, that the walls of these substructures are of the same height as the podium of the amphitheatre (21 ft.). The corbels would be no longer required, and we find, therefore, that the wall (or arches) of the new work nearest to them is built up in entire disregard of them, the piers in many places pressing upon them and even incorporating them, and, in short, rendering them henceforth useless. This alone, as you have observed, establishes the fact that these substructures are later than the amphitheatre, as originally constructed. Thus, from the *terre-pleins* of the amphitheatre, over the tops of the walls, a permanent wooden arena was now constructed, and where the stone coping of the walls is still in its place the grooves are to be seen in which the beams rested. The vertical grooves between the corbels were undoubtedly for posts to support the netting which protected the spectators from the animals, and perhaps also to support the inner edge of the velarium.

With regard to the circular sockets, lined with bronze, which are found in the chambers before entering the area, in the centre of all the passages leading down into it, and in the centre of all the corridors or passages formed by the substructures, I gave this explanation, suggested by what I had seen at Cincinnati, in the United States. The chief manufacture of this place is bacon, and thousands of pigs are slaughtered there daily. They are controlled and handled with precision and swiftness by being driven into a series of small pens, separated by doors revolving on a pivot, like a turnstile. As the contents of one pen are despatched the doors are made to revolve, and a fresh batch of victims are induced to go forward. Revolving doors could not have been unknown at Rome. They were certainly used by the Greeks, who probably did not invent them. In this way, I conceive, the wild beasts were pushed forward, with safety to their keepers, until they arrived at the inclined planes leading up to the arena. As the animals were required upon the stage, the doors of the pens nearest to the ascent would be turned, and the beasts would at once spring upwards to the light coming through the trap-doors. That these sockets were for capstans, for the purpose of hauling up the cages is, of course, absurd. The fact that they are found in the chambers and passages before entering the area of the amphitheatre, their number, the want of space between the walls, and the mechanical difficulties in applying vertical capstans for such a purpose, renders this view quite untenable.

ALFRED PEARSON, Lieut.-Col.

## ROOFS.

SIR,—I must thank your correspondents, "Signet" and Mr. R. W. Clure, for their letters in the *Builder* of December 23 and 30, conveying some information, very much to the point, in reference to my paper on Roofs. I was not aware of the peculiarity of the roof at Roslyn, which I have never myself visited. In speaking, however, of the non-existence of stone vaults forming the real roof, I was thinking of the genuine Gothic intersecting vault rather than of so simple a form as the barrel vault. It would be quite possible, by the aid of cement and of angle tiles, made to the curve of the groins, to make such a roof water-tight without putting anything else on it; but the difficulty would then be in regard to appearance, which could hardly, perhaps, be satisfactory.

Mr. Clure's experiment in concrete roofing I am much interested to hear of; but he must allow me to point out that the summing up of my paper, which he embodies in his note, is, though no doubt unintentionally, a complete misrepresentation, and that I certainly did nothing so unpractical or Quixotic as to "condemn every known material for roofing," and then "wind up" with a suggestion in favour of concrete. All I said was that the grandest and most monumental form of building could not be realised except with a permanent indestructible roof, and that the more homogeneous this was with the walls the better. All buildings cannot be, or are not required to be, of this enduring and monumental type. As to concrete, I never for a moment contemplated it as a material specially desirable in itself, either architecturally or constructively, for roofing; I merely suggested it as a material that might afford help in the problem of combining durability with economy in the roofing of ordinary town structures, such as street houses, where economy was a necessary consideration. Mr. Clure's instance is practically in favour of the suggestion; but he need not, in bringing it forward, have summed up the purport of my remarks in a way that would convey so incorrect an impression to any one who had not read them. H. H. STATHAM.

## SAFETY AT THE ROYAL ALBERT HALL.

IT ought to be generally known, when fears as to safety in theatres are being expressed on all hands, that very special arrangements have long been made by the Council of the Royal Albert Hall to guard against perils by fire. Of these regulations we need not speak, but we may mention, in respect of the building itself, that, according to the manager, Mr. Wentworth Cole, — The facilities for egress and ingress are most ample, being at the rate of one door for every 200 persons. That the Hall can be cleared of 7,000 people in less than seven minutes. That the size of the staircases, corridors, and landings has proved that a crush of any magnitude cannot occur. That on the roof of the Hall are twenty tanks, containing 2,000 gallons of water each (40,000 gallons in all), supplied by a pumping-engine from an artesian well at the back of the Hall. If emptied, the tanks can be refilled in twenty minutes. The water company's service is also connected with these tanks in the event of the pumping-engine breaking down. That a special high-pressure service, quite distinct from that which supplies the tanks, surrounds the Hall with six fire-plugs, at suitable distances: this is in connexion with the company's 12-inch main, and the supply is practically inexhaustible. And that all fire appliances such as hose, hydrants, and extincteurs are inspected weekly by an inspector, who is specially employed for that purpose, and who is not on the ordinary staff of the Hall.

## WORKS OF THE LATE MR. LOUGH.

MRS. LOUGH, knowing the regard entertained by her late husband for the neighbourhood of his birthplace, had the happy idea of offering the gallery of works Mr. Lough has left behind him to the town of Newcastle-on-Tyne. The mayor and some other members of the corporation came up as a deputation to view them, and we are glad to hear the offer was at once accepted, and that a building—partly free-library, partly a Lough Gallery—will be at once erected, if we are rightly informed, to house them worthily.

Immediately after the lamented death of Mr. Lough, to which we alluded briefly at the time, an eminent baronet who possesses some of the sculptor's best works, evinced his continuing appreciation of Mr. Lough's genius by commissioning the production in bronze of the remarkable shield modelled some years ago, having for the central subject the Fall of Phaëton, and which displays alike his imaginative power and his skill in the delineation of animal forms. This is now in the hands of Mr. Moore, of Thames Ditton, and will be produced at once.

**Salisbury Cathedral.**—The new choir screen is about to be put up in the cathedral, and further portions of the new organ are being erected by Messrs. Willis, the builders.

## WATER SUPPLY.

*Cupar.*—On the 15th ult. the Cupar Water Works were formally opened by Provost Welch, who congratulated the inhabitants on the completion of the Water Works, which, he hoped, would long continue to yield an ample supply for the wants of the town.

*Droitwich.*—On the 20th ult., at a meeting of the Droitwich Town Council, a scheme for the supply of water, and for the sewerage and ultimate disposal of the sewage of the town, was submitted, when it was unanimously resolved to adopt such scheme and forward the same to the Local Government Board for approval. It was also decided to give the necessary notice that 25,000*l.* would be required for the works and purchase of land. The engineer for the scheme is Mr. E. Pritchard, C.E., of Warwick, who proposes to obtain the supply for Droitwich by means of "adits" driven in the strata overlying the brine springs.

*Stone* (*Staffordshire*).—The proposal to establish a private water-works company for the town of Stone has evoked much opposition. The subject came under discussion at the meeting of the Board of Guardians on the 19th ult. Mr. Humber is the engineer to the projected company, and it is proposed to establish water-works near the town. At present the water supply is from wells, not a few of which are said to be contaminated. The Board unanimously passed the following resolution:—"That this Sanitary Authority, approving of the resolution passed by the Parochial Committee, does not, at the present time, sanction the proposal for establishing a Water-works Company for the Stone special drainage districts."

*Liverpool.*—A special meeting of the Water Committee of the Liverpool Town Council was called on the 18th ult. The meeting was called to hear a statement from Mr. Mather, of the firm of Messrs. Mather & Platt, engineers, Manchester, with reference to the probability of obtaining a water-supply from local sources. Mr. Mather said it was stated upon authority of the most reliable kind that the triassic rocks below and around Liverpool had a depth of at least 1,400 ft., and beneath these the permian might be found, overlying the coal measures, perhaps of a thickness of 200 ft. But they might assume, anyhow, that for 1,000 ft. or 1,200 ft. there was a clear section of water-bearing rock, consisting of sandstones of various degrees of porosity, separated from each other by thin partings of impervious marl or clay. This vast deposit extended, as Professor Dawkins and other geologists had shown, over an enormous area, with several great depressions tending to separate into basins, but yet having continuity throughout, bounded inland by the older rocks and the coal measures, and having freedom of outlet by gravitation seawards for the water it contained in the districts of Fleetwood, Southport, and Ormskirk. In this area it was obvious there was a vast supply of water at present untouched which was kept up by the rainfall. It might be assumed that about 800 square miles of surface would contribute to this reservoir by percolation, if it were not to some extent covered by marls and clay. But at least one-third was exposed to the rainfall by being covered with sand, shingle, and drift at the outcrop. Moreover, the rivers flowing over the triassic rocks would contribute largely to this store, where not filled and overflowing with water. Now, if one-third of the rainfall be taken as the possible replenishment of these rocks, should they be drawn upon, they had a quantity of no less than 114,688,000,000 gallons annually, apart from the incalculable store now locked up in this porous strata. In the presence of these figures there was little fear of exhaustion. At present these rocks were saturated, and the surplus water flowed over the surface. It was to this enormous store of water he would direct the attention of the committee. In order to liberate it, he recommended a boring of 1,000 ft. deep of large diameter. After passing through some of the impermeable bands of marl or clay, or close sandstone, many of which existed in this formation, he would by mechanical means cut off all connexion between the rocks they had already pierced and those lying below, and the water of the sub-lying sandstone should rise to its normal level in the pipes lining the bore. The pump-barrel should be placed at such a depth as would keep it replenished with the quantity equivalent to its extracting power, and thus a continual flow of pure water might be secured, untouched by drainage or sea-water, and entirely ndependent of that which they now used. His belief was that there was a vast source of water in these rocks which would fill up as quickly as it was drawn upon, and that a quantity equal to what Liverpool had at present could be obtained by penetrating those lower rocks, and by putting down a series of bore-holes and pumping arrangements, such as he had described. Questioned by Mr. Forrest as to the time it would take to bore 1,000 ft. and complete all the machinery, Mr. Mather said that if a good price were paid his firm could complete the work in twelve months, putting down a pump which could lift eight or ten million gallons per day. Asked further with regard to the cost, Mr. Mather said that the whole cost for buildings, engines, boilers, erections, travelling-cranes, and everything would be about 13,500*l.* The working expenses would be about the same as that of the present wells.

## WHAT CONSTITUTES A "SUFFICIENT" SUPPLY OF WATER?

CORRIE *v.* MAYO.

THIS case was lately before the Lord Chief Justice and Lords Justices Bramwell and Amphlett, sitting in the Court of Appeal. It was an action by the tenant of a house at West Clandon, near Guildford, for breach of a covenant in the lease to supply him with a "sufficient supply of water."

The covenant in the lease was that the defendant, the landlord, would complete, with reasonable despatch, such works as were necessary to secure the tenant a sufficient supply of water to the premises. The tenant entered in November, 1873, and it was found that there was not a sufficient supply of water, and the tenant made complaints, and the landlord had the well bored deeper. There was no complaint of the water until May, 1875, and then the tenant complained that this water was polluted and such as to cause ill health to the inmates of the house. The landlord then had the well "cased," but this was not finished till August; and in September, 1875, the tenant left the house, and in October brought this action against his landlord for the breach of his covenant. In the meantime, the deep well had been deepened and had been converted into an artesian well, 140 ft. deep, right down into the chalk, where pure water was obtained.

The cause came for trial before Mr. Justice Quain, who held that the covenant meant not merely a supply of water sufficient in quantity, but reasonably pure in quality; and on that there was contradictory evidence of experts as to the quality of the water.

In the result the jury found for the defendant, and the learned judge wrote a certificate to the effect that he was dissatisfied with the verdict, and it seemed a very fit case for a compromise.

Three judges of the Common Pleas division,—Lord Coleridge, Mr. Justice Brett, and Mr. Justice Lindley,—after the Judicature Act had come into operation, set aside the verdict for defendant, and directed a new trial, on the ground that the verdict was against the weight of evidence.

The case was argued at great length, and in reply to the Court the Solicitor-General said he had already proposed a compromise, but the offer was refused. The truth is, he said, when a case has gone on so long, the costs are so heavy that the parties cannot be brought to agree.

A new trial was eventually directed, costs to follow the dismissal of the defendant's appeal.

## SKETCHING WITHOUT AN ORDER.

SIR,—I had read of Newstead Abbey Church having a grand west front, and decided on visiting it at the first opportunity, which was Boxing-day. On referring to the time-table I was somewhat amused on reading that at Lindby Station passengers only having business at the Colliery or the Abbey were allowed to alight, and I presumed from it that it was a private station, not worked by the Midland Railway Company's officials. Disregarding such a hint, I alighted at the station, and was not asked by the officials whither I was going. I was surprised at finding 4 in. of snow on the ground, and green fields a few miles lower down. On going through Lindby village, I found a cross at each end, a very unusual thing in our villages. The route to the Abbey is a very pleasant one, through a wood, with a disreputable road; but the morning was a very frosty one, enabling pedestrians to get along easily. On arriving at the Abbey I sketched at the west front for an hour and a half (it is of Decorated date), and had just completed, when a policeman came from the house adjoining, and asked me if I had leave to sketch. I said, "No. Whom should I ask?" He said, "No one there; you ought to have written to Mr. Webb for leave to enter the grounds." I said, "Could I not apply at the house then?" He said, "No." This suggested to me that Mr. Webb, of Newstead Abbey, had an interest in the sale of postage-stamps, since people were not allowed to apply personally, but only by letter,—but which, I humbly think, would not increase his income much. Having got what I wanted, I left at his request. During the last twenty years, throughout the length and breadth of England, I have visited many abbeys, but at none of them have I ever met with such treatment as having a policeman sent to order me off while sketching at an abbey church, to which place the public are allowed access without hindrance; and very frequently, when such churches are situated in parks and grounds, the owners have invariably and courteously permitted the public to view them, without any of the childish importance displayed by the owner of Newstead Abbey; and I can only express my surprise that the members of the Nottinghamshire Archæological Society should allow such treatment in their county to go unchallenged; but it is to be trusted that public opinion, through the press, may be brought to bear upon the matter, and compel the owner of Newstead Abbey to forego the churlish enjoyment he exercises in giving and refusing access to such as myself, who require to sketch at the churches, those places having come to be looked upon as public property.

J. B. WATTS.

## RICHMOND PARK AND THE PUBLIC.

SIR,—An attempt has been made to throw discredit on the article which appeared in the *Builder* of November 25, headed "Richmond Park and the Public," but without effect. Having read the article in question, I can testify to its general accuracy, with the exception of the part which reads, "Upwards of 100 acres is also inclosed in winter for feeding the deer." This should be "108 acres are kept inclosed and manured to grow hay for feeding the deer during the winter months." This part of the park is the nearest to the rifle ranges at Wimbledon. Richmond Park was inclosed during the reign of Charles I. The Princess Amelia, daughter of George II., attempted to exclude the public from the park altogether, and had it not been for the pluck and perseverance of Mr. John Lewis, a brewer of Richmond, they would have been shut out for ever. The objector does not appear to have much knowledge of the subject on which he writes, it being a well-known fact that the head keeper has had nothing whatever to do with the keeping up of the Park. At the present time the baliff (Mr. Sherratt) undertakes this duty. He was appointed by the Office of Works in 1851; and previously the late Mr. Edward Jesse, Itinerant Deputy Surveyor to the Office of Woods, Forests, and Land Revenues. It is well known that even during Mr. Jesse's term of management, the head keeper was a great impediment to all good plans. With regard to the game inclosures, the Earl of Lonsdale stated that the money was voted by Parliament to make these inclosures for the purpose of renewing the trees (great numbers of trees having been cut down to supply timber for the navy), and on condition that the inclosures were to be thrown out to the public when the trees were out of danger from the deer and cattle. The present ranger has not only caused these inclosures to be enlarged, but has had others made for the purpose of sheltering game to amuse himself and friends; some of these inclosures having been made upwards of fifty years.

Public money is annually voted by Parliament for this sport; therefore, it certainly appears hard that the public are not allowed to play cricket, or any game in this large park. There can be no doubt that the Office of Works are the proper authorities to have the whole and sole control, which would be highly beneficial to the public.

ONE OF THE PUBLIC.

## A DANGEROUS NEIGHBOUR.

SIR,—As one personally and pecuniarily interested in the welfare of house property, and particularly that portion of property that lies in close contiguity to the London, Brighton, and South Coast Station at "Victoria," permit me to call your attention to the enormous wooden structure, reared, I presume, for temporary purposes, but that has for the last ten years, in defiance of all Building Acts, maintained its supremacy close to that noble pile of buildings called the Grosvenor Hotel. The consequences to owners of house property in Pimlico, in case of a conflagration there,—than which nothing can be more probable,—would be something frightful; and I feel sure that it needs no more than, through the medium of your columns, to call the attention of the public to this anomalous state of affairs to find some cure for this evil.

AN OWNER OF HOUSE PROPERTY IN PIMLICO.

## OBITUARY.

*The Rev. Thomas Hugo, F.S.A.*—The Rev. Thomas Hugo, M.A., rector of West Hackney, died on Sunday last, after a short illness. The rev. gentleman, who was descended from a French Protestant family which settled in England in consequence of religious persecution, will be best known to most of our readers as an antiquary, and as taking part in the proceedings of the London and Middlesex Archæological Society.

*Sir Titus Salt.*—Sir Titus Salt, one of the few remaining founders of our manufacturing prosperity, died on the 29th ult. at his residence, Crow Nest, near Halifax. He was the inventor of the clothing material known as alpaca, but he will be best known to the general reader as the founder of the model town of Saltaire. About the time of the Great Exhibition (says the *Daily News*), when Bradford was still a dirty manufacturing town, Sir Titus determined to take his works and workpeople into the country. A strip of land was bought at Shipley, near the Midland Railway and the river Aire, and a building was erected on it which was then regarded as the largest and handsomest factory in the world. The whole range of buildings covered nine acres and a half, and the ventilation, the warming, and the sanitary precautions were as perfect as they could be made. The workpeople some 4,000 in number, were housed in good cottages, and the village thus created was supplied with park, cricket-ground, public institutions, lecture-halls, and places of worship, by its founder. In explaining his object Sir Titus Salt said he hoped to draw around him a population that would enjoy the beauties of the neighbourhood, and be well fed, contented, and happy. He had, he said, given instructions to his architects that nothing should be spared to render the dwellings of the operatives a pattern to the country, and he hoped to live to see satisfaction, happiness, and comfort around him. Saltaire, at the last census, contained 820 houses and 4,389 persons.

## ARCHÆOLOGICAL SOCIETIES.

*Somersetshire.*—The Somersetshire Archæological Society has, in compliance with the memorial of the Mayor and Corporation, decided to hold its annual meeting for the year 1877 at Bridgwater. The date of the meeting will probably be early in August.

*Birmingham.*—At a meeting of the Archæological Section of the Midland Institute, Birmingham, on the 22nd ult., a paper on "The Collegiate Church of St. John the Baptist, Coventry," was read by Mr. W. G. Fretton, of Coventry. Mr. Fretton said this interesting church, apparently fresh from the builders, dating back, however, 500 years, was the only church of similar origin in Coventry, and possessed so many peculiarities in its construction as to make it unique among ecclesiastical structures. The Collegiate Church of St. John the Baptist owed its origin, in the first place, to the earliest of the guilds of the city. The most ancient of these was St. Mary's, or the Merchants' Guild, founded on the 20th of May, 1340, by licence of Edward III. This was followed by the formation of St. John the Baptist's Guild, on the 6th of October, 1342, and St. Catherine's Guild in the following year. In 1344 a movement in the direction of a distinct religious edifice for the Guild services was commenced, and Isabel, Queen of Edward II., gave to the Guild of St. John a parcel of land 117 ft. long, by 33 ft. at the north and 40 ft. at the south end belonging to her, in Coventry, on which to build a chapel in honour of God and St. John. The work of chapel-building was promptly commenced by the master and brethren of St. John's, but only the eastern portion of what was now seen was so far finished as to be ready for dedication in 1350, the work of extension being continued for some years afterwards. Recent excavations in the interior of St. John's enabled them to form a tolerably accurate idea of the area occupied by the chapel as it stood in 1357, and which apparently did not include more than part of the present chancel, its south aisle, and a portion of the north aisle. In the time of the Commonwealth, much havoc was committed in the churches of the city, and St. John's did not escape. In 1726 an order in Council was made that steps should be taken to convert it into a parish church, but nothing was done further until 1733, when notice was drawn to its state by the bishop of the diocese. It was enacted by Parliament that from and after the 23rd of June, 1734, the church of Bablake should be deemed a parish church by the name of St. John the Baptist, in the city of Coventry. In conclusion, Mr. Fretton said he regarded the restoration as so far very successful. The designs had been prepared under the direction of Sir Gilbert Scott; but when subsequent discoveries had suggested a departure from the plans, so as to preserve and reproduce characters and features, this had been done.

## BACK DRAINAGE *v.* UNDER-HOUSE DRAINAGE.

THE question of back-drainage came under discussion at the last meeting of the Camberwell vestry, when, as it will be seen from what follows, the vestry approved of back-drainage as compared with having drains under houses, when circumstances admit of the former system being carried out. The Sewers Committee had recommended that permission should be given to Mr. Bailey to drain some houses now being built by him in Lordship-lane, at the rear of the same, at his own expense. The recommendation was opposed by Mr. Drayner, who moved as an amendment the construction of a sewer in the main road in front of these particular houses, and that Mr. Bayley should be requested to drain into the same. He observed that sooner or later a sewer would have to go along the front road, and it might as well be made now. Mr. Roy (a builder) said there was a splendid fall at the back of the houses in question, and there would be a 9 in. drain into the main sewer. As a sanitary matter he would not put a drain under a house if it could be kept outside. He could not understand any person advising the putting of a drain under a man's house when there was no necessity for it. Mr. Denny said the disadvantage of having drains under houses was too apparent to be lightly treated, and he for one would vote for a house being drained at the rear if it could be done without any corresponding disadvantage. The vestry confirmed the recommendation of the committee, sanctioning the back-drainage of the houses in question.

## THEATRES.

*Newcastle-on-Tyne.*—Plans having been passed by the Corporation for the erection of a permanent circus at the St. Thomas's-street corner of Percy-street, Newcastle, it has been agreed to register a company for the purpose of carrying out the undertaking, under the title of "The Newcastle Permanent Circus and Agricultural Company (Limited)." Capital 25,000*l.*, in 5*l.* shares. The building will be erected on the property of Mr. John Irving, builder, with whom the scheme is stated to have originated.

*Southampton.*—Gordon's Theatre of Varieties, Southampton, was re-opened on Boxing-night, after having been closed for six months, during which period it has undergone extensive alterations, additions, and improvements, under the direction of Mr. W. H. Mitchell, architect. The floors of the hall and stage have been removed, and reconstructed on the ground level, while the length from wall to wall is 117 ft., and the greatest width 40 ft.; the auditorium is nearly 80 ft. long to the front of the proscenium, and the total height 37 ft. With the exception of the hall and stage, the whole of the buildings, both in the front and rear, have been removed, and new premises erected, extending from French-street on the one side to Bugle-street on the other. The new building in front of the auditorium is four stories high, and rises 50 ft. above the pavement, and communicates with French-street. The proscenium has been increased in height, and the main wall thrown back, giving an additional depth of 8 ft., making a total of about 30 ft. from the footlights, and the opening is 21 ft. 6 in. wide.

*Doncaster.*—The Doncaster theatre narrowly escaped destruction by fire on the 28th ult. About a quarter to three in the morning a policeman discovered that a part of the stage was on fire, and that one of the dressing-rooms in the wings was almost consumed. Water is laid on into the theatre, and hose provided, so that no time was lost in getting this out, when it was discovered that the pipe, or directing tube, had been cut and was missing. The fire brigade, however, brought hose with them, and quickly attached it to the mains, and played upon the fire with such effect that they extinguished it before it could make much progress.

*Her Majesty's Opera-house, Haymarket.*—Messrs. Chinnock, Galsworthy, & Chinnock have been instructed by the Earl of Dudley to sell by auction, on the 1st prox., at the Auction Mart, the lease of her Majesty's Opera-house. The property is held on lease for the residue of a term of which fifteen years were unexpired at Michaelmas, 1876.

*Liverpool.*—The magistrates of Liverpool have decided that in future, before granting a licence to any theatre in that town, they must have a certificate from the borough surveyor, or other surveyor appointed by the Health Committee of the Town Council, as to the construction of the building, especially with regard to its means of egress.

## ALLEGED ALTERATION OF SPECIFICATION.

AT the meeting of the Lambeth Board of Guardians last week, a letter was read from the clerk of the works at the new Infirmary building, complaining of the specification having been altered by the orders of a Mr. Street, who was acting for Messrs. Fowler & Hill, architects. It referred to the want of felt being placed between the roof boarding and the slates.

The Chairman observed that they employed a clerk of the works, and should support him.

Mr. Taylor recollected that when old Lambeth Church was rebuilt, it was considered best not to have felt; but the result was that in a short time the roof had to be stripped, and felt placed there. It was a mischievous thing to alter a specification.

The Chairman intimated that Mr. Fowler's attention had been called to the matter by the clerk of the works.

On the motion of Mr. R. Taylor, the question was referred to the Building Committee.

## RECLAMATION OF WASTE LANDS.

MR. MITCHELL HENRY, M.P., is doing in Galway what the Duke of Sutherland is doing in Sutherlandshire and the Bridgwater Trustees at Chat Moss, near Manchester. He is reclaiming bog and heath lands, but on a much smaller scale than is being done in Scotland and England. The same system, however, is adopted by all, except that the Duke of Sutherland is doing his work by means of twelve steam engines and ploughs, and Mr. Henry by manual labour. Does it pay? is the first question generally asked, and Mr. Henry replies that, including farm buildings and roads, the reclamations in Galway have cost on an average 13*l.* an acre, which at 5 per cent. means an annual rent-charge of 13s., to which is to be added a sum of from 1s. to 3s., the full annual value of the unreclaimed land. The Duke's reclamations cost 30*l.* an acre, so that the rent is about double, and would render the land in Ireland too costly for renting; but, on the other hand, excellent profit may be made if the expenditure is so kept down that the annual rent is not more than from 15s. to 18s. per acre. Mr. Henry's reclamations are being made in the Pass of Kylemore, in which there is very little deep bog and an abundance of limestone. The first thing is to remove the water by drains, which must go right down to the gravel below. They are cut wedge-shape by Scotch tools, and all that is requisite to form a permanent drain is to replace the wedge-shaped sod and ram it down between the walls of the drain, where it consolidates and forms a tube which will remain open for an indefinite number of years. The surface sinks and becomes consolidated. It is then dug by spade labour or ploughed, the latter by oxen or horses (on soft land) in wooden pattens; then dressed well with lime, which "boils the bog," causing the vegetable matter to become excellent manure. Then it is broken up by the chain or revolving harrow, and is ready for root crops, to be followed by the usual rotation. The crops on the reclaimed land in Galway have proved abundant.

**A Journeyman Decorator,** who had been earning on an average 2*l.* 8s. per week, sued the Metropolitan District Railway Company for compensation for injuries received in a collision at the Earl's Court Station in January last. The company had paid into Court 800*l.*, to which the jury added 300*l.*

## THE GLASGOW CITY CHURCHES.

LORD PROVOST BAIN, of Glasgow, has drawn up a scheme which he intends to submit to the Town Council regarding the city churches. He proposes that three of the nine city churches should be sold—the Tron, St. Enoch's, and St. George's,—and that other three should be erected on sites more suitable for the population. He says that these three are in situations where the displacement of the population has been and will continue to be so great that there is not a sufficiency of inhabitants in the neighbourhood to fill a church, nor a sufficiently extensive field for the labours of a clergyman; and so it might be for the interest of the Church and the community that these churches should be sold, and others built in lieu of them in other and better situations. Mr. Thomas Binnie, valuator, reports that the value of St. George's is 45,000*l.*; St. Enoch's, 26,000*l.*; and the Tron, 21,000*l.* The Lord Provost then says:—

"Mr. Binnie makes the value of the three churches and sites to be 92,000*l.*; but deduct for safety 2,000*l.*, there remains 90,000*l.* It may be assumed that new churches, including sites, might be built for 15,000*l.* each, or say 45,000*l.* for the three. Thus, 45,000*l.* would be left in hand. Eight of the city clergymen have an endowment of 425*l.* annually, and the ninth has 400*l.* a year. It is proposed that the endowment for all of them should be reduced to 300*l.* a year each, but that the clergy should receive the seat-rents of their respective churches in addition. The endowment would thus amount to 2,700*l.* annually, and to secure this at twenty-five years' purchase would require a capital sum of 67,500*l.* Toward this apply the sum left over after building the three churches, 45,000*l.*—leaving 22,500*l.* to be provided by the Corporation. But as time will be required to dispose of the churches and build new ones, let us suppose the Corporation gives 30,000*l.* In this way the city would pay a sum equal to 1,200*l.* a year instead of losing 2,345*l.* annually. It is suggested that all the churches and the 30,000*l.* should be handed over to commissioners, to be named in an Act of Parliament, and that they should realise the churches and build the new ones. In this the Corporation would at an early date be relieved from all further claim in connexion with the city churches and with the stipends of the city ministers. It must be of advantage to the community that the clergy should be men of ability, and we may expect that with a stipend of 300*l.* a year, and seat-rents added, our city churches would command the best talent in the country."

## "BYE-COMMISSIONS."

THE *Leeds Mercury* of the 16th ult. had a leading article commenting upon the recent theatrical case of Coe *v.* Sothern and Another, in which the following passage occurred:—

"But somehow, whether it be a stage-manager 'engaging a company,' and accepting commissions from the actors; or an agent putting out a contract for a Government, and accepting a commission from the contractor; or an architect who takes his commission for looking after the contractors, but also accepts commissions from them, because they enjoy being looked after by him. . . . in all these cases there is the one peculiarity, that this bye-commission or acknowledgment is underhand, and carefully concealed from the principal."

In reference to this passage, the following letter appeared in the *Mercury* of the 20th ult.:—

"In your article in Saturday's paper, referring to the case of Coe *v.* Sothern, in which you so ably and justly condemn the corrupt system of receiving bye-commissions, I am much pleased to see your reference to that of 'an architect who takes his commission for looking after the contractors, but also accepts commissions from them because they enjoy being looked after by him.' I have heard that this does apply to some architects,—and the commission has been offered to me more than once, but sternly refused,—but I sincerely hope not to many. How can the architect be considered honest who takes this commission from the contractor? Is his client made acquainted with it? I think I may safely say, in all cases he is not. Suppose his consent to be asked for,—would he consent? No. Then why, in the name of all that is honest and straightforward, do not architects, as a body, set themselves right before their employers, and firmly refuse to accept these commissions, and confine themselves to the recognised per-centage paid to them by their clients for their drawings and superintendence of work?—Yours, truly, ARCHITECTUS."

We have no hesitation in asserting that architects, as a body, *do* confine themselves to the per-centage paid to them by their employers. Let those who assert the contrary give us "instances" to prove the truth of their assertion.

**A Word for the British Workman.**—Dr. Acland, Regius Professor of Medicine at Oxford, in delivering the prizes to a public elementary school, on the 20th ult., commented strongly upon the remarks lately made by the Rector of Lincoln (Mr. Pattison) on the condition of art-education, and stated that he had the conviction that notwithstanding all our bad work, some of the best was to be found in every department to which the skill of workmen might be applied, and he also believed that among our British workmen were hearts as true, heads as clear, and hands as fine as among any other nation.

## AN ARCHITECT'S CLAIM.

PARAIRE *v.* ARGENT.

AT the Romford County Court, on the 19th ult., Mr. Edward Louis Paraire, architect, of London, sued James Argent, of East Brook House, Dagenham, for 15*l.* 15*s.* for work done.

Mr. E. Rolland, barrister, who appeared for plaintiff, stated that in 1872 defendant was the owner of a beer-house in Sun-street, London, and in consequence of the works being carried out in Liverpool-street by the Great Eastern Railway Company, the traffic was diverted from Sun-street, and the receipts of defendant's house fell off from 40*l.* to 12*l.* per month, and the question arising as to whether he had not a claim on the railway company, Mr. Huggins, the manager of Reid's brewery, brought about a meeting between plaintiff and defendant, and after they had met at defendant's solicitors', it was decided to prepare a case for the opinion of counsel, and plaintiff was instructed to prepare plans to accompany the case. The plans were prepared and sent to the solicitors, but in the end it was feared defendant had no case against the company, and the matter dropped for a time, but someone else having brought an action and obtained a considerable sum from the company, defendant again took proceedings in the matter, and obtained 50*l.*

Evidence having been called,

Mr. Preston, for the defendant, contended that all that was done in the matter was by the direction of Mr. Huggins, the manager of Reid's Brewery Company, who were mortgagees to a considerable sum on defendant's house, and who would suffer materially from the diminution of the trade of the house, and defendant was asked by Huggins to meet plaintiff at Paul & Fearon's (Huggins's solicitors), and being willing to assist the Brewery Company all he could he did so, but at last he got tired of the protracted negotiations, and would have nothing more to do with the matter. Paul & Fearon were not defendant's solicitors, and had never charged him a farthing, and he never heard of this claim until after the death of Huggins. So far from having employed Paul & Fearon, he employed another solicitor, who obtained 50*l.* for him. If there was any truth in the plaintiff's statement, why had not Mr. Paul or Mr. Fearon been brought to corroborate it, and why had he waited till the death of Mr. Huggins before sending in his claim?

Defendant having been called,

Mr. Rolland replied on the case.

The Judge summed up at considerable length, and said he thought the defendant ought to have his verdict; but, on the application of Mr. Rolland, he nonsuited plaintiff and allowed defendant costs.

## NON-PERFORMANCE OF CONTRACT.

GILLINGHAM *v.* MORTON.

THIS was a claim (preferred in the Crewe County Court on the 20th ult.) for 5*l.*, money paid for work done under a contract, which, it was alleged, the defendant, a builder at Crewe, had not carried out.

The plaintiff's case was, that in May, 1875, he agreed with the defendant to pay him 24*l.* 10*s.* to build a house in Samuel-street, Crewe, which was to be finished in November, 1875. The defendant was to draw certain money as the work progressed, but, owing to his impecunious circumstances, he went away from the agreement, and obtained advances of money at various times until he received the entire balance due for the job. The house was eventually completed, excepting some alterations at the front palisading wall, in the foundation of which the defendant had omitted to put three courses of bricks. Finding that the agreement had not been carried out in this particular, he asked the defendant to complete the work, but this he declined to do. Subsequently the plaintiff called in a professional man, who declared the wall to be improperly constructed: hence the present action. The plaintiff had since got Mr. Henry Stringfellow to complete the work for the sum of 5*l.*

The plaintiff called Mr. Edwin Furber, surveyor; Mr. George Watson, town surveyor; and Mr. Stringfellow, to show that the work had not been done according to contract, and that the amount claimed was reasonable.

The defendant stated that at the very onset the contract was departed from, and that he had been obliged to take down the eastern wall and the whole of the foundations of the cesspool and ashpit, by order of Mr. Thomas Bromfield, who said the plaintiff was infringing on the adjoining occupier's land. He further alleged that he had done other work in addition to what was stipulated in the contract, and for which he sent in a bill for 10*l.*, but for which he agreed to accept 4*l.* odd, on the understanding that he was not to disturb the palisading wall in dispute, and that no further claims should be made upon him. The plaintiff replied that he had paid the defendant for his extra work, and he produced a number of receipts for the money the defendant had drawn from him.

The Judge said there was practically no defence to the action, and he consequently gave judgment for the plaintiff, with costs.

## BREACH OF COVENANT.

JANSSON *v.* BRADBURY.

THIS was an action which came before Mr. Justice Lindley, at the Manchester Winter Assizes, to recover damages for alleged breach of covenant on the part of the defendant. The amount of the damages claimed was 500*l.*

The case for the plaintiff was that prior to the month of September, 1875, he was possessed of two adjoining plots of land, with dwelling-house and premises erected thereon, in the Oxford-road, Rusholme, and that he sold one of the plots to the defendant, and retained the other in his own possession. By the deed of conveyance to the defendant, the defendant covenanted that the houses should be set back 6 ft. from the road. The plaintiff resided in one of the houses upon the plot he retained, and his house joined on to certain other houses erected on the plot of land sold to the defendant. The houses belonging to the plaintiff were set back at least 6 ft. from the road, but the defendant, instead of setting back the houses on his plot of land, had brought them forward more than 6 ft., thereby violating the covenant he had entered into with the plaintiff. The defendant had converted the houses into shops, and had, by bringing them forward 6 ft., left the plaintiff's houses in a recess. In consequence of these alterations, the plaintiff's premises had been damaged, the access of light and air being obstructed, and the value of the houses considerably reduced. The plaintiff alleged that the alterations were carried out so carelessly and negligently that the land supporting the plaintiff's house had been interfered with; the house had settled to some extent, the walls were cracked, and the property was damaged to the extent of the amount claimed.

Before the close of the case a consultation took place between the learned counsel, and it was arranged that judgment should be entered for the plaintiff for 50*l.*, with costs.

## "BRIDGE OR SUBWAY?"

SIR,—In your estimate of the comparative advantages of a bridge or subway, the conclusion arrived at is based on figures which I believe to be erroneous. Admitting the superiority of a subway for river traffic, the whole argument hinges upon the assumed difference between the height of a high-level bridge above Trinity high-water mark, and the assumed depth of the roadway of a subway below this level, or the comparative height to which heavy goods would have to be lifted by incline in either case. Giving the least height of the roadway of a high-level bridge at 90 ft., which by the report would still at high water shut out 520 vessels per annum, you say:—"The committee would do well to call upon the architect for corresponding information with regard to the depth below the river at which a tunnel may be supposed to be practicable. A section of the river is required for this purpose, as well as a list of the draughts of the vessels passing above St. Katherine's Docks. The hydraulic movement of the Thames at the proposed spots must also be indicated. Again, the geological nature of the bed of the river must be ascertained. If we take Trinity high-water line as a datum, we have seen that 90 ft. have to be allowed above that level for the roadway of a fixed bridge. For depth below, we must allow a fall of the tide, say 22 ft.; for the draught of a laden vessel, say 35 ft. [this exceeds the draught of the *Great Eastern*]; for the crown of the tunnel, say 3 ft.; and for the clearance of the tunnel itself, say 18 ft. This gives a total of 78 ft., or 12 ft. less to descend than we had, in the former case, to ascend. But it must be observed that these dimensions, if possible for a subway, are not possible for what we usually understand as a tunnel. A certain thickness of soil beneath the bed of the river is essential for any process of tunnelling. A subway, with the soffit of its arch only 60 ft. below Trinity high-water line, could only be put in by coffer-dam, or by some process that would be equivalent to tunnelling, not through earth, but through water. Considering, then, the natural preference for a daylight line, the great extra risk and cost of the subway, and the necessary expense of pumping, to keep it dry, and of gas to light it, it does not seem to us probable that a gain of 12 ft. in the height to be ascended and descended on the approaches is such as to turn the balance, as far as the advantage of the land traffic is regarded, in favour of the subway."

Now, the whole of the information herein suggested is in the hands of the committee. Accurate soundings have been taken of the bed of the Thames, by the Conservancy, at every few yards, almost from its source to its junction with the sea. The actual depth at the proposed point of crossing, instead of 57 ft., as would appear from the foregoing statement, is only 33 ft.; and for a considerable distance below the entrance to the docks, over which vessels of the greatest draught may be assumed to pass, does not exceed 36 ft. at high water. The actual depth of roadway of subway would, therefore, be not 78 ft., a depth which would be sufficient for a tunnel; but by the figures given 33 + 3 + 18, or 54 ft. below high-water level, giving a difference of lift, as compared with roadway of a high-level bridge 90 ft. above high water, of 36 ft., instead of 12 ft., in favour of subway,—a very wide margin for reduction in cost and length of approaches.

Another most important point in the comparison for land traffic has been overlooked,—the access to districts adjacent to the river. The heaviest traffic passing over the bridge will be that due to the shipping confined immediately to the river's banks, and one of the principal aims of a new communication must be its accommodation. Here the surface of the ground is only about 3 ft. above high-water level. A bridge 90 ft. above this level would give a height of 87 ft. above the bank,—assuming that single approaches only were formed with inclines of 1 in 40. The distance which a heavily-laden wagon would have to travel in passing from a warehouse on one side of the river to the opposite warehouse on the other,—making due allowance for the rise of ground on the north side,—would be 13,000 ft.,—over 2½ miles. Manipulated no matter how, with extra approaches doubling back, with inclines of 1 in 40, the least possible distance to be travelled would be 7,800 ft., or nearly 1½ mile, to reach a point the actual distance to which is under 300 yards,—a serious difference from an equine if not from an engineering point of view.

It is objected that my estimate takes no note of the cost of Waterloo and London Bridges, which cost over 1,000,000*l.* each, and of the Rotherhithe Tunnel, which cost 455,000*l.* Both of the bridges are built with what at the time must have been a specially costly material, and cannot, therefore, be accepted as fixed standards for estimating all other crossings. Some prominent bridges have since been erected at much less cost. But if it must be assumed that, because these cost each over 1,000,000*l.*, this subway must also cost 1,000,000*l.*, on what principle is it estimated that a high-level bridge, nearly three times their height, and consequently requiring nearly three times their length of approaches, would also cost only 1,000,000*l.*? By this rule the cost would be nearer 3,000,000*l.* The cost of Rotherhithe Tunnel was largely due to accidents, which led to reconstruction; omitting these, the true cost would be much under 455,000*l.* The proposed subway, as a subway, is entirely distinct in character and construction from a tunnel; and because of this distinction the absence of risk, and certain other peculiarities, would cost less per square foot of roadway than either a bridge or a tunnel. This, in addition to its being the most suitable for land and river traffic, I regard as the special feature of my design. A more direct test of the probable cost than comparison with that of Waterloo or London Bridges would be an examination of the quantities and prices used. These, at least of the approaches, may be readily checked; so far from the cost of

this portion of the work being exceeded, my impression is it may be reduced. The prices used for land were those paid by the Metropolitan Board for land recently acquired in the neighbourhood.

An erroneous impression prevails as to the character of this subway. It may, as suggested, be to all intents a daylight route,—if not paradoxical, as it may appear, an almost open-air route. The drainage I believe I could accomplish without annual cost. As an architectural ornament to the metropolis,—if the railway viaducts in and about London may be accepted as examples of an overhead approach,—a subway may be made a much more effective work in every sense. JOHN KEITH.

## A FIRE-EXTINCTOR.

SIR,—Permit me to reply to Mr. James's remarks on my self-acting fire-extinctor.

The pin-hole is for the tiny fuse; only when that is ignited is seen the end of a pipe, through which the gas is poured down instantly on to the fire.

He objects to this in bed-rooms. Then do not have it; have a deluge instead, turned on by the fuse, provided a cistern is near, and water therein. He also has some doubt regarding the density of carbonic acid gas; thinks it would escape up the flue. Let him take his beer-jug to any chemist for a quart: he can carry it home without losing any of it, and can turn it out into tumblers; but he need not "swig" it.

He thinks the Fire Brigade is preferable. I do not disparage it; but the engines invariably arrive when the building is aglow, to protect surrounding property, if they can find the plugholes, and get water; with which element they often spoil entirely stock-in-trade of many commodities. I once saw a fire-engine belonging to the Windsor Brewery Company, their own men with it. After much display and delay, and loud shouting of "Where the —— is the nozzle?" which was not to be found, the machine was dragged home again. For a long time inquiries were made of the men if they had "found the nozzle."

To remove all doubts and scruples of Mr. J., if he will find the house, I will find the extinctor. R. T.

## SCHOOLS OF ART.

*West London.*—The distribution of prizes to the successful students of the West London School of Art took place on the 20th ult. in the theatre of the Quebec Institute, Lower Seymour-street. Lord George Hamilton, M.P., presided. Silver medals were awarded to Madena Moore, Herbert Morris, and Emma Parting; bronze medals to John Gould and William Richardson; and national book prizes to James Murray and Louis Reich; and second and third grade and school prizes were also distributed during the evening.

*Derby.*—The prizes awarded to the successful students of the Derby Central School of Art were recently presented by Lord Edward Cavendish, the president. The report of the committee states that the plans of the architects, Messrs. F. S. Waller & Son, for the New Central School, are based on a scale commensurate with the present extent of the school, added to such further provision for its development as the growth of the town warrants. Although the appeal of the committee for the requisite funds had been responded to most liberally in some instances, yet the total amount promised fell far short of what was needed to complete the work contemplated. Under these circumstances it was resolved, early in the year, not to undertake the whole scheme at present, but to commence by building only the absolutely necessary portion. After consideration it was decided to erect the north wing of the design, but as the main entrance is deferred this involves the provision of a temporary staircase, &c. This wing consists of an extensive block, 100 ft. long by 30 ft. wide. On the ground-floor there will be the ladies' and the elementary and machine drawing-rooms, and on the upper floor the antique and painting rooms. Although only a section of the whole plan, yet it is the most important one, and when erected it will provide a large part of the accommodation required for the students. The foundation-stone was laid by the Right Hon. Baroness Burdett-Coutts, on the 1st of August last. The building is making good progress, and the contractors (Messrs. J. & E. Wood) expect to complete their work sufficiently early in the summer to permit a Fine Arts Exhibition to be held in the new rooms. The report of the head-master (Mr. Simmons) shows that a fair share of good work has been done during the year, the students numbering 358.

*Birmingham.*—On the 12th ult. the presentation of prizes to the students of the Birmingham School of Design took place, Mr. J. Chamberlain, M.P., president, in the chair. The recipients of prizes were too numerous to mention. The Chairman, in a characteristic speech, told his audience that if art made no progress in this country they would agree that it was not for want of much speaking on the subject, of much advice and admonition. Since the Exhibition of 1851 the critics had had it all their own way, and a very melancholy and depressing way it happened to be. Since that time the British public had almost grown accustomed to find itself abused as thoroughly vulgar and incapable of an appreciation of art. The British workman had been lectured and libelled, and the British manufacturer had been ridiculed and reviled, while those pharisees of art had been continually giving thanks that they were not as other men. Now, he confessed to a certain impatience with that constant carping and depreciation,—that jargon, he would almost call it,—of superior persons who were so confident in their own qualifications that they appeared to scorn accuracy whenever they descended to details, and who were so much above the horde of common men that they could only express a polished contempt for our puny struggle to elevate ourselves into some higher appreciation of what was decent and comely in the surroundings of our own ordinary life. In the addresses and speeches which he had recently been studying he had found two which appeared to him to be specially worthy of notice,—not because they were greater offenders in that respect than any others, but because they were men holding distinguished positions which invited attention and commanded respect. Mr. Poynter some time ago delivered an address to the art section of the Social Science Association at Liverpool; and the Rev. Mark Pattison, in giving the art prizes on a similar occasion, delivered an address to the students in the city of Oxford. Mr. Poynter, as they were aware, was a member of the Royal Academy; he was the director of the great national school at South Kensington. Mr. Poynter was also the painter of several pictures of the most undoubted merit, which the stupid British public had, notwithstanding, in some instinctive way recognised as containing real artistic qualities, and as being specimens of that art which a poet described as striving to attain by "shadowing out the unattainable." And the Rev. Mark Pattison was a scholar and a man of letters, and he (the speaker) found that both those gentlemen agreed in utter wholesale condemnation of all the results of art-teaching and education during the past generation. He supposed they would all admit that in an indictment of that kind, sweeping as it was, there was a great deal that was true, but what he complained of chiefly was the spirit in which the indictment seemed to him to be framed, and above all of the utter lack of practical suggestion and helpfulness which distinguished those two addresses. If he might borrow a vulgarism from the Rev. Mark Pattison he should say that both those speeches were Brummagem Ruskinism,—Ruskinism, that was, with a genius which made self-assertion endurable and eccentricity enjoyable. Now, divesting them of much illustration and collateral argument which was very disputable, he found that those addresses might be reduced to three cardinal propositions. In the first place, that all true art depended upon honest workmanship, which was no doubt correct; and that there was no honest workmanship in England, which was, to say the least of it, exaggerated. In the second place, that mechanical reproduction was fatal to the highest form of art, which was also accurate, although he doubted whether we had reached the limit of what art might do even for mechanical productions; and, in the third place, that art had made no progress in this country, and especially not in Birmingham, which was almost the *bête noir* of this eclectic school, during the past thirty years. Those propositions were illustrated by the old story about Brummagem jewelry, which had been disproved a hundred times, and by a perfectly new story about a Brummagem coal-box, which he would undertake to say never saw Birmingham, but was manufactured in quite a different town. Suppose for a moment they admitted all those propositions, sweeping as they were, *après*—what next? What suggestion had the Rector of Lincoln or the director of the great art-school to make which should enable them to amend their ways, and to make some improvement in their condition? He had read carefully those two addresses, and he did not find in them one single practical suggestion which could be usefully applied.

**Bangor Cathedral.**—It is stated that the Dean of Bangor has offered to contribute 500*l.* towards the restoration of the nave of Bangor Cathedral, conditionally upon a proportionate amount being subscribed by each of the four canons residentiary.

## ACCIDENTS.

ON the 28th ult. the front part of the premises of Messrs. Thomas Brothers, drapers, Scotland-road, Liverpool, fell with a great crash, and a good deal of alarm was felt for some time, as it was feared several persons might be buried in the ruins. A portion of the building, however, in which two families lived, fortunately remained intact, but the inmates had to make a hasty exit for fear it might fall. The upper story of the building was used as a workroom, and eighteen young women were usually employed there, but the accident happened before they began work.

During the night of the 28th ult., and the morning of the 29th, a heavy south-westerly gale was experienced in the metropolis, in common with most parts of our coasts, and was attended with much damage to property. In Percy-street, Hackney, a heavy stack of chimneys was blown down, and the bricks fell through the roof of the back kitchen, which, fortunately, was not occupied at the time. In Albion-terrace, Peckham-road, near Rye-lane, the parapets of two houses were blown down into the front gardens, carrying with them several feet of the roof, and leaving the bedrooms exposed completely to the weather.

Mr. J. T. Hoyle, coroner, held an inquest on the 23rd ult., at Newcastle, on the bodies of Margaret Graham, aged fifty years; George Jobling, aged about forty-five years; and Bridget Parish, aged sixty-four years; who met their deaths on the 21st ult. through the falling of a house in Pandon. It appeared in evidence that the tenants had made no complaints, nor had they any impression that the house itself was in a bad state. Mr. Fulton, borough surveyor, stated that shortly after the accident he examined the place where it occurred. He found that the wall above the property had given way and fallen on to the house and thus caused the accident. The wall was not a very strong one, and the earth behind it, the principal part of which was deposit soil, would by the rain become like a sponge. It would thus become heavy and force the wall away, and then falling on to the gable it had knocked the chimney away. It was an old wall, and the property was not good. The beams appeared to be rotten; but he did not think that there was any one to blame. "It was one of those natural accidents that would always happen." It was the rain that caused the accident, and if it had been dry weather it would not have happened. The jury returned a verdict to the effect that the deceased persons met their deaths through the accidental falling of the house in question, caused by the rain which had fallen for some days previously swelling the earth and bursting the wall on the east side.

## RAILWAY ITEMS.

*New Central Station and Viaduct at Manchester.*—The past year has seen great progress made with the new viaduct of the Cheshire Lines Committee, between Cornbrook and Manchester, which, when complete, will be one of the largest constructions of the kind in the neighbourhood. The object of its construction is to give the Cheshire Lines Committee direct communication to their new station, now in course of erection in Windmill-street, from their line to Warrington, Liverpool, and other portions of their system; in other words, it is the completion of what is known as the Manchester end of the Liverpool Extension Railway. The new line between Manchester and Liverpool has been in use for some time, but the Cheshire Lines Committee's system extends only to Cornbrook from Liverpool, and, in order to obtain access to London-road Station, it has been and is now necessary to run over a portion of the Manchester South Junction and Altrincham Railway. The new viaduct will give the committee a line entirely of their own.

*Forres Station Improvements.*—The improvements recently effected by roofing over the south platform of Forres Station are about to be supplemented by roofing over the platform that accommodates trains from the east. The new structure will rest on two rows of cast-iron octagon columns. The principals will be constructed on the French system of wrought-iron rafters, with cast-iron struts, wrought-iron tie-rods and purlins, all bolted together, and fixed to cast-iron shoes bolted to beams. The roof is to be covered with galvanised corrugated iron. The light is to be admitted by two rows of roof-

lights, and the ridge is to be finished with an iron ornamental cresting, of the Scottish thistle design. The gables will present an ornamental appearance to the town, will have ornamental pendants similar to the cresting, and will be finished at the apex with a large cut finial and pendant. The platforms are to have completely-covered connexions with the present refreshment-rooms and booking-office. The cost is estimated at 1,300*l.*, and the contractors are,—for masonry, Messrs. Ross & Macdonald, Forres; and for ironwork, Messrs. Wm. Smith & Son, Inverness.

*Projected Short Line in the North.*—A Scotch paper says:—The looks which Dundee has been casting on the civilisation of the West are growing more and more longing. The newest idea is to have a short line from Wormit Bay,—where the Tay Bridge leans on Fife,—to Newburgh, which is twenty minutes by rail east of Perth, and due north of Edinburgh on the line, which will be accelerated by the coming bridge across the Forth, and by which, per the Devon Valley route, one can get faster to Glasgow than by any present method. The land, which belongs to three proprietors,—the chief, Lord Zetland,—it is calculated, would be improved in value by the line as much as 25 per cent., but Dundee and the North-East coast would, if the rails sought were laid down, take a fresh interest in itself and in the world. If the trunk arrangement from Perth and Dundee had been through Glenfarg and Kinross to Queensferry, with the Tay bridged at Newburgh, or tunnelled where the Earn joins the Tay, as was at one time suggested, the through route from North to South would have been a thousand times better, and scores of feeding schemes and junctions like that now proposed would have been rendered unnecessary.

*Re-laying of the Great Western Railway.*—The Great Western Railway Company have resolved to re-lay the line between Oxford and Leamington on the sleeper system. On Sunday last a large number of men were employed at King's Sutton, near Banbury, re-laying one of the lines, and a single line had to be worked between Banbury and King's Sutton during the day. Near Oxford a portion of the line has been relaid on the new system.

*Dangerous Condition of a Tunnel.*—During the night of the 28th ult. all traffic on the down-line in Woodhead tunnel, on the Manchester, Sheffield, and Lincolnshire Railway, had to be stopped, owing to part of the roof threatening to fall in. All trains are being worked on one line, the tunnel, which is three miles long, being built in two sections. A large staff of men is engaged in repairs.

## MASTERS AND MEN.

*Durham.*—The master-builders in Durham on the 28th ult. received a notice from the masons in their employment to the effect that they will require an advance of 4*s.* per week in their wages. An arrangement exists between the masters and the masons by which no alteration in the current rate of wages paid can take place without three months' notice of the same. Consequently if the demand of the masons now put in is conceded, it would come into force on the 1st of April, and it is claimed by the men that the advance of 4*s.* shall rule all the year round, as it will require that amount to bring their wages up to those paid to their fellow workmen in neighbouring towns. The present wages of the masons in Durham are 35*s.* per week, and the advance of 4*s.* per week will consequently bring their wages up to 1*l.* 19*s.* per week. The master builders had already given notice to their joiners of their intention at the commencement of the year to seek a reduction of their wages, on the ground of slackness of trade, and on this ground it is anticipated that they will resist the demand of the masons.

*Leeds.*—Some weeks ago the operative masons of Leeds and the district gave their employers six months' notice of a request for an advance of 3*s.* per week during the summer months, and they also intimated that they agreed to be paid during the winter months at the rate of 1*l.* 13*s.* per week for the first month, 1*l.* 10*s.* per week for the second month, and 1*l.* 13*s.* for the third month, instead of 1*l.* 13*s.* per week throughout the three months. To this notice the masters, through the Builders' Association, replied that they were willing to confer with the men, whom they took occasion to remind of the difficulties which the present system of working by the day was beset. The employers urged that the hour system would be more remunerative to the men, and would assist in promoting amicable feelings. Accordingly deputations from the Master Builders' Association and from the workmen—each empowered to come to a final decision—met in conference the other evening, the result being that a decision was arrived at adopting the hour system on and after the 1st of May next, the wages of the stonemasons to be 9*d.* an hour, the winter time-sheets to be so arranged that the average winter wages be not less than 32*s.* per week. Artificial lights to be used when necessary to allow the working hours contained in the time-sheets—such time-sheets to be afterwards mutually arranged. All men employed as setters of stone to be paid 9¼*d.* per hour when fixing, and the other working rules to remain as heretofore.

*Sheffield.*—A case of "rattening" recently occurred in Sheffield, two bands having been taken from the grinding-wheel of Messrs. Yates & Wood, saw manufacturers. The masters have since received a note, signed "Mary Ann," saying that the bands had been taken because of an apprentice and a non-unionist being employed, and that if the rattening was not a sufficient warning powder would be tried next time. Thinking this letter came from the officials of the union, a reply was sent to them that they might blow up the works if they thought proper, but that the firm would still continue to employ men whether they were non-unionists or not. The secretary of the Sawgrinders' Union called on Messrs. Yates & Wood, and repudiated all knowledge of or connexion with the rattening.

*Cornwall.*—The condition of the locked-out China Clay labourers in Cornwall is becoming desperate. The employers are determined not to employ any of the men out unless they renounce the union; the workmen being equally determined to stick to the union. A deputation of the operatives has been appointed to proceed to the North of England to lay their case before the various executives of the amalgamated trade societies, with a view to obtain pecuniary support for the locked-out men.

## CHURCH-BUILDING NEWS.

*Logie-Coldstone.*—The old church of Logie-Coldstone, which has undergone extensive improvements and alterations, has been re-opened. The old church, built nearly a century ago, was beginning to be in a dilapidated and very uncomfortable condition. Consequently, the matter was laid before the heritors of the parish, who gave their approval at once to have it put in a sufficient state of repair. Messrs. Duguid & Sons, Ballater, gave a design with the probable expenses of the alterations, which were approved by the proprietors in April last. Messrs. Duguid were instructed to carry out the repairs, and Mr. A. Ogilvie, Aboyne, was appointed inspector of the work. The whole of the old roofing was removed, the front walls taken down and rebuilt from the window sills; height was added to the windows, and a foot of close-dressed belting was added to the height of the building all round. The gables have been put on a steep pitch, with corbie-step gabling, and ventilator along the slate ridge.

*Northampton.*—The foundation-stone of the new church of St. Lawrence, Northampton, was recently laid by the Countess Spencer. St. Lawrence's will be the first of four churches proposed to be built by the Northampton Church Extension Society. It will be a massive structure of brick, in the Early English style, with some special and striking features, from designs by Messrs. Barder & Baker, of the Adelphi. The church will accommodate nearly 800, and the total cost is estimated at about 7,500*l.*

*Aberdeen.*—It is stated that the architect and contractor for the erection of the new spire of St. Nicholas Church, Aberdeen, have found that the stones of the fine old Norman arches in the centre of Drum's Aisle, granite though they are, have become too decayed to support the superstructure of a tower and spire. The *Aberdeen Free Press* understands that the Churches' Committee have had the subject of setting forward the new spire to the extreme south of the aisle under discussion. It came out that, however the point was decided, the cost of erection would be increased some 1,000*l.* or 1,500*l.* The committee were all but unanimous in condemning the erection of the spire at the south end of Drum's Aisle, and a remit was made to the City Architect specially to consider and report as to the cost of so strengthening the arches as to render them available for supporting the fabric of the tower and spire.

*Redditch.*—The new church of St. George, Redditch, has been consecrated by the Bishop of Worcester. It has been built on a site at Bredon given by Lady Mary Windsor-Clive, who has also contributed largely to the building fund. The church is in the Early English style, with nave, chancel, and north aisle. The roof is open-timbered. The sittings, which are of varnished pine, will accommodate 400 persons. The reading-desk is of carved pine, and the pulpit, which is of stone, contains three panels, the centre containing a figure of the Saviour, and the others figures of the Apostles. Mr. T. Preedy, of London, was the architect, and Mr. T. Garbutt, of Malvern, the builder. At present there is no north aisle, but the space between the columns on the north side is temporarily walled up, so that the aisle can be added at any time when necessary. The total cost is about 3,500*l.*

*Wallacetown, Dundee.*—Plans have been prepared by Messrs. C. & L. Ower, architects, for the restoration of Wallacetown Established Church, which was erected in 1840, but for want of funds at that time the tower was not completed, and is very unsightly in its present unfinished state. It is now intended to carry out the original idea of a bell tower and clock, in keeping with the style of the building, which is Norman Gothic.

*New Malden.*—The parish church of New Malden is to be enlarged by the addition of a new chancel, from plans prepared by Mr. Ewan Christian. The estimated cost is 1,000*l.*, which will be borne by the family of the late Mr. John Coysgarne Sim, of whom the new chancel will be a memorial.

*New Shoreham.*—A vestry meeting was held at the Town-hall, New Shoreham, on the 14th ult., to consider the state of the parish church, which is being renovated,—the condition of the tower, the roof of the south aisle, the reseating of the church, the necessity of having new curtains, &c. The vicar of the parish (the Rev. Dr. Smith) presided, and opened the meeting by explaining its object, and adding, with reference to the state of the tower, that some promise had been made of a new bell, and that to receive such it would be necessary to strengthen the south tower. Mr. W. H. Harper, a churchwarden, and Mr. Arthur Loader, the architect, stated that the tower would stand 400 or 500 years, if the bells remained as they were, but if they made them swing with their mouths upwards, the stability of the tower might be endangered. The cost of strengthening the fabric was estimated at 300*l.* to 400*l.* As to the roof of the south aisle, they pointed out that water passed through it, and Mr. Loader recommended the erection of a new roof, which would cost about 80*l.*, as, if it were left as at present, the groyned ceiling below might be damaged. According to a report in the *Sussex Daily News*, the proceedings were somewhat uproarious, the point chiefly in dispute being whether chairs or pews were to be adopted. No decision was come to, and the meeting was adjourned for a month. Nothing seems to have been said as to the wisdom or otherwise of the general scheme of restoration, which has been seriously questioned.

## Books Received.

*A Ride to Khiva: Travels and Adventures in Central Asia.* By FRED BURNABY, Captain Royal Horse Guards. Cassell, Petter, & Galpin, London. 1876.

It is almost too late in the day for us to say more about "A Ride to Khiva" than this,—that a copy of the third edition has reached us, and that a fourth edition has since been published. It is a dashing account of a dashing act, and is agreeable and instructive reading. Captain Burnaby is a man of no ordinary physical powers, and he must have needed them all in his expedition. Mental power was required too, and his book shows that he possesses that also. The Captain is a strong anti-Russian, and urges that any advance of that power in the direction of Kashgar, Balke, or Merve should be looked upon by England as a *casus belli*, and that Russia should at once be so informed. Some valuable information as to routes is given in an appendix, together with several maps. The book came at the right time both for author and public.

### THE WET AND THE WIND.

LAST week the upper portion of a house in progress in Ashburn-place, Cromwell-road, was blown off. The house on plan being angular, exposed to the force of the wind, and the brickwork being very wet, are given as the causes of the disaster. Unfortunately, the damage is not confined to the house, but extends to several sets of stables in a mews immediately adjacent, the brickwork which fell on to the roofs carrying all before it, and bulging the front wall to a considerable extent.

When this accident is mentioned, the exclamation will at once be heard, "Those jerry builders again!" We had not examined this particular structure; but looking at some houses in the same locality, erected and finished by the same firm of builders, we can speak upon our own observation as to the satisfactory manner in which the work generally was carried out; and we can safely say that on this and the adjoining estates, the properties of Lord Kensington and of Colonel Gunter, houses are built in a manner that would not have been improved upon if they had been executed under contract for special owners. We go a little out of our way to make this observation because the innocent sometimes suffer instead of the guilty.

## Miscellanea.

**Institute of Mechanical Engineers.**—The proposed removal of the head-quarters of this society from Birmingham to London is strongly objected to by many of the Midland members, and on the 22nd ult. a deputation met the Manchester and Liverpool members at Manchester, to discuss the objections, and especially the alleged disadvantages of having all such influential bodies centralised in London. Mr. F. Ryland read a letter from Mr. F. J. Bramwell, of London, who expressed a strong opinion against the proposition to remove the institution. Mr. P. D. Bennett stated the views of the Birmingham members who were opposed to the removal. He said the brains of the institution were in the provinces, and it was feared that if the proposal were carried out the society would enter into competition with the Institution of Civil Engineers, and this would lead probably to its being placed in a position second to that body. Mr. F. Ryland said that according to Mr. Marshall, the secretary to the institution, there was a total membership of 1,054. London and a district of twenty miles had 199 members; Manchester, 142; Liverpool, 51; Derby, Sheffield, and Nottingham, 98; Leeds district, 67; north of Leeds, 168; Birmingham, 129. In the discussion which followed there was, nevertheless, almost a general expression of opinion in favour of the removal scheme, on the ground that London would be more convenient to the majority of the members.

**"The Gentlemen's Club," Warrington.**—A new building now in course of erection in Bold-street, Warrington, is intended as a Gentlemen's Club. It is a commodious building, with a frontage of 50 ft. to Bold-street and 54 ft. to Egypt-street. It is in the Gothic style, and is built of bricks (the facing bricks being from Knutsford), with moulded and ornamental bricks for the cornices, arches, string-courses, labels, &c. Very little stone is introduced. The principal entrance to the building is from Bold-street, and is formed by a Gothic arch resting on polished Rainhill stone pillars, with carved caps, forming an outer porch. On the ground-floor of the club-house is the entrance-hall, dining-room (36 ft. by 19 ft.), committee-room, lavatories, butler's pantry, inquiry-office, steward's-room, kitchens, &c. On the first-floor is a large billiard-room, with open timber roof, the reading-room (over the dining-room), smoking-room, card-room, and more lavatories. The second floor contains another billiard-room, dressing-room, bath-room, servants' bed-rooms, &c. The principal feature of the elevation is a large bay window, 16 ft. wide, which is carried up to the second floor. The building is being erected by Messrs. Ostle & Taylor, builders, of Haydock-street, Warrington. The architects are Messrs. John White & Co., who are represented on the works by Mr. Beesley.

**Science and Art at Brighton.** — The Princess Louise has consented to visit Brighton at the beginning of February, to take part in the opening of a new school of science and art. A view of the building was recently given in the *Builder*.

**Formation of an Architectural Association in Leeds.**—On the 14th ult. a meeting of Leeds architects was held in the Library of the Philosophical Hall, for the purpose of forming an architectural association. Mr. George Corson occupied the chair. There was a large attendance. It was resolved that an association should be formed, to be called the Leeds Architectural Association, and that its members should consist of persons who are professionally engaged in the study and practice of architecture and civil engineering. The objects of the association are:—To afford facilities for the study of civil architecture, to advance the professional interests of the members, and to serve as a medium for friendly communication between members and others interested in the progress of the art. The methods by which it will be sought to attain these objects will be by means of papers and discussions upon subjects of professional interest; by classes for the study of special subjects; by awarding prizes as an encouragement to architecture and engineering; by visiting buildings, and by the formation of a sketch-book. Rules were adopted, and members were afterwards enrolled.

**A Warning Voice.**—Mr. Thomas Connoly, the trade-union delegate, who has been six months in America, warns English operatives and manufacturers to keep themselves on this side the Atlantic. The former he will startle with the news that in the state of Pennsylvania, with less than the population of London, "there are more persons, able and willing to work, out of employment, than there are in all England." In the mining industry, "in the best of times, there are twice as many miners as the trade requires." A Dewsbury carpet-weaver says he gets less a yard than he was paid in England, and "has not worked five square months the whole year." A Sheffield steel-roller, who was promised seven dollars a day, gets work two days a week for half that sum. It has been contemplated by English manufacturers to establish factories in the United States, so as to abolish the influence of the protective duties. Mr. Connoly advises them to do no such thing, for he observes, significantly, there are bankrupts enough in that country. He speaks highly of the perfection and extent of the labour-saving machinery of the American mills.

**Proposed Extensive Improvements at Bristol.**—On the 22nd ult. an influential deputation from the city of Bristol, consisting of the mayor (Mr. G. W. Edwards), chairman of the Streets Improvement Committee (Mr. William Spark), and the vice-chairman (Mr. H. J. Mills), accompanied by the clerk (Mr. J. G. Heaven) and the city surveyor (Mr. Josiah Thomas), waited on the Right Hon. G. Sclater-Booth, President of the Local Government Board, at Whitehall, for the purpose of obtaining the sanction of that department to a proposal to raise a loan of 194,050*l.*, for the improvement of the city of Bristol and its neighbourhood. It appeared that application had been made some time ago for permission to raise 194,050*l.*, but by some misapprehension permission had only been granted to raise 50,000*l.*, an amount altogether inadequate to carry out the proposed alterations and improvements, for which the sanction of Parliament had been obtained. Mr. Sclater-Booth promised to have the matter looked into.

**An Example to Employers.**—Messrs. Cassell, Petter, & Galpin have established on their premises, in La Belle Sauvage-yard, capacious dining and refreshment rooms, to which all their hands,—some 700 or 800 in number,—have admission. The articles are retailed at cost price, and, what is better, are of the best quality. At one o'clock there is a capital *table d'hôte*, consisting of meat, vegetables, and pudding, with a glass of beer, for one shilling. A man could not live cheaper at home, and certainly not for the price, quantity and quality being the same, were he compelled to patronise the dining-rooms for his mid-day meal. The example is one which might well be followed by other large firms.

**Robbing a Foundation-stone.**—On the 18th ult. it was discovered that the contents of the jar in the cavity of the foundation-stone of the new and extensive parochial buildings at Smithston, Greenock, had been stolen. It was found that the thieves had rifled the jar of its contents, including the current coins of the realm, from a sovereign to a farthing (in all, 2*l.* 1*s.* 8½*d.*) The thieves had to pull down some 3 ft. or 4 ft. of newly-built wall to enable them to get at the stone covering the cavity.

**Woodstock Church.**—At an influential meeting, which was held at Woodstock on the 22nd ult., his excellency the Duke of Marlborough in the chair, it was resolved that the ancient parish church of St. Mary should be restored forthwith, according to the plan of Mr. Arthur W. Blomfield, whose report was received and adopted. It is estimated that the sum of 5,000*l.*, will be required for this purpose, and of this sum about 1,700*l.* have been obtained already. The rural dean stated that in the year 1869 the late Bishop of Oxford (Wilberforce) instructed him to prepare a report of the church building and restoration in twenty-four or twenty-five parishes during the preceding twenty years, and he had ascertained that the sum of 23,600*l.* had been expended in this deanery. Lord Randolph Churchill, in his speech, described the historical associations of Woodstock at length.

**The Property Market.**—The *Metropolitan* remarks,—"As might be expected, during the past week very little has been done in the way of sales by auction, only 17,734*l.* being returned as for sales for the last week, the private contract sales included. The return for the year 1876 amounts to 10,495,927*l.*; in 1873, it was 8,948,382*l.*; in 1874, 11,160,324*l.*; in 1875, 11,466,490*l.* Thus it will be seen that the present year shows about a million less of reported sales during the year as against the two preceding years. No doubt there have been several depressing causes for this difference, but at the present time, communication with several of the leading auctioneers places us in a position to say, that there is likely to be great activity, as far as regards sales, during the coming year."

**Proposed New Railway Hotel.**—A scheme for the establishment of an hotel for the convenience of passengers arriving in London by the South-Western Railway is on foot. The proposed site is known as the Savoy, situate on the Thames Embankment, and with frontage in Lancaster-place, at the north end of Waterloo Bridge. This ground, together with the duchy of Lancaster House, has been obtained (according to the *South London Press*) on a lease of eighty years, on favourable terms, and plans have been approved by the duchy authorities, on behalf of Her Majesty, for the erection of a fine hotel. The promoters state that "if the proposed scheme be carried out, the traveller arriving at Waterloo Station may find himself in less than five minutes in one of the most complete and elegant hotels in Europe."

**Death at a Christmas Feast.** — The "Wandering Exonian" (Mr. Harry Hems) gave his customary dinner to old folks at the Country House Inn, on Christmas-day. His guests numbered thirty,—men and women,—all poor and deserving old people, most of whom had been present at previous festivities of the kind. "The Wandering Exonian" presided, and Mr. Pickard occupied the vice-chair. A genial welcome greeted the guests as they arrived, and at half-past one o'clock they sat down to a substantial meal of good old English fare. About five o'clock one of the guests, Mrs. Elizabeth Gliddon, nearly eighty years of age, was seized with what appeared to be a fainting-fit, and died in an adjoining room.

**The Abingdon Surveyorship.**—At the last meeting of the Abingdon Town Council, the Town Clerk was directed to give Mr. Townsend, Borough Surveyor and Inspector of Nuisances, a quarter's notice to determine his services on the 25th of March next; and it was resolved that the applications and testimonials of the applicants for the office of Surveyor and Inspector of Nuisances be considered by the Sanitary Committee, who were authorised to select from amongst the applicants those whom they thought desirable to attend before a meeting of the Council.

**The Darlington Sewage Farm.** — The umpire's award in this arbitration has been given. The question was as to the value to be paid by the Corporation of Darlington to Wilkinson's trustees for Stressholmes farm, which was required for a sewage farm for the borough. The highest valuation of the claimants' valuers was 21,521*l.* 10*s.*, and the highest for the Corporation 10,416*l.* The arbitrators were unable to arrive at a joint decision, and the case went before the umpire, who has given an award for 13,607*l.*

**Proposed Clock-Tower for South London.** Mr. R. S. Faulconer has offered to erect a clock-tower and clock on the site of the old parish church of Newington, which had historic associations dating back 800 years.

**Winter Exhibition at the Royal Academy.** The Exhibition of works by the Old Masters and by deceased Masters of the British School, now open in Burlington House, comprises 293 paintings, and will be found very interesting. It brings prominently to the front the works of Sir Henry Raeburn. It will be duly considered in our pages before long.

**Enlargement of Brixton Convict Prison.** Several groups of the prisoners at Brixton convict prison are employed in laying bricks and erecting new walls for enclosing the ground attached to the buildings. The men are said to turn out good work. The prisoners are taught masonry, smiths' and carpenters' work, and shoe and mat making, &c.

**Water-closets Discountenanced.** — The Local Board of Barnard Castle are discountenancing plans of all new buildings upon which are shown water-closets. They uniformly recommend earth-closets, a system, which, it is contended on the other hand, as applied to the town of Barnard Castle, can only with great difficulty be worked.

## TENDERS

For the construction of sewers and sewerage works, Acocks-green, Birmingham, including irrigation-grounds, straining-tanks, man-holes, flushing-chambers, ventilating-chambers, and other works in connexion therewith, for the Solihull Rural Sanitary Authority. Mr. E. Pritchard, engineer, Warwick. Quantities supplied:—

| | |
|---|---|
| Acock, Oxford | £8,370 0 0 |
| Fisher, Dudley | 8,359 6 9 |
| Barber, Chesterfield | 7,901 0 0 |
| Nowell & Co., Handsworth | 7,728 4 6 |
| Stretton, Sheerness | 7,525 14 3 |
| Bourne, Birmingham | 7,432 0 0 |
| Cox, Shrewsbury | 7,122 10 0 |
| Bissett & Co., Bristol | 7,113 19 3 |
| Haines, Harbourne | 6,885 19 2½ |
| Robinson, Worcester | 6,653 0 0 |
| Rayner, Bootle | 6,072 0 0 |
| Green & Son, Warwick | 5,625 0 0 |
| Bushell, Birmingham (accepted) | 5,177 12 2½ |

For alterations at the Citizen public-house, Houndsditch. Mr. Wm. C. Banks, architect:—

| | |
|---|---|
| Parnacott | £416 14 0 |
| Sharpe & Everard | 398 0 0 |
| W. & F. Croaker | 395 0 0 |

For school for the Crondall School Board, Surrey. Mr. S. Stapley, architect. Quantities supplied:—

| | |
|---|---|
| Limmings | £3,371 0 0 |
| National Co-operative Builders and Contractors' Society | 3,350 0 0 |
| Diamond | 3,270 0 0 |
| Kemp | 2,899 0 0 |
| Duke | 2,875 0 0 |
| Cranston | 2,865 0 0 |
| Watford | 2,800 0 0 |

For rebuilding portions of malt-houses, Kew Bridge, for Messrs. Jupp & Sons. Mr. John W. Smithies, architect:—

| | |
|---|---|
| Barnes | £1,030 15 0 |
| Spicer | 903 5 0 |
| Beauchamp | 869 0 0 |
| Taylor | 868 0 0 |
| Adamson & Son | 847 0 0 |
| Gibson | 832 0 0 |
| Nye & Son | 822 0 0 |
| *Ironwork.* | |
| Corcoran, Witt, & Co. | £247 10 0 |
| Goodfellow | 155 0 0 |

For sewering, street-making, &c., for the borough of Portsmouth. Contract No. 20. Mr. J. E. Greatorex, engineer:—

| | |
|---|---|
| Marshall | £10,785 0 0 |
| Burbidge | 8,481 0 0 |
| Wight | 8,328 0 0 |
| Cooper | 8,323 0 0 |
| Harrison | 8,252 0 0 |
| Hayter | 7,931 0 0 |
| Ward (accepted) | 7,235 0 0 |

For five houses at Stoke Newington. Mr. R. Blackmore, architect. Quantities not supplied:—

| | |
|---|---|
| Hill | £3,027 0 0 |
| Toms | 2,925 0 0 |
| Sharman | 2,694 0 0 |
| National Co-operative Builders and Contractors' Society | 2,398 0 0 |
| Linfield | 2,194 0 0 |
| Wyatt | 1,895 0 0 |
| Jenkins | 1,800 0 0 |

For two villa residences in Hornsey-lane for Mr. T. Mattinson. Messrs. Lander & Bedells, architects:—

| | |
|---|---|
| Southcott | £3,991 0 0 |
| Axford | 3,897 0 0 |
| Ebbage | 3,837 0 0 |
| Carter | 3,820 0 0 |
| Kerry | 3,815 0 0 |
| Brass | 3,810 0 0 |
| Grover | 3,787 0 0 |
| Kelly | 3,775 0 0 |
| Williams & Son | 3,732 0 0 |

For enlargement of Park Chapel, Hornsey. Messrs. Lander & Bedells, architects:—

| | |
|---|---|
| Grover | £3,106 0 0 |
| Axford | 2,972 0 0 |
| Ebbage | 2,970 0 0 |
| Moreland & Co. | 2,943 0 0 |
| Carter | 2,940 0 0 |
| Dove, Brothers | 2,920 0 0 |
| Williams & Son | 2,867 0 0 |

For chapel at Nazing, Essex. Messrs. Lander & Bedells, architects:—

| | |
|---|---|
| Ebbage | £1,240 0 0 |
| Grover | 1,037 0 0 |
| Bentley | 1,025 0 0 |
| Clarke | 950 0 0 |
| Hampton | 916 0 0 |

For warehouse in Aldersgate-street. Messrs. Lander & Bedells, architects:—

First Portion.

| | |
|---|---|
| Dove Brothers | £1,936 0 0 |
| Williams & Son | 1,914 0 0 |
| Moreland & Co. | 1,911 0 0 |
| Nightingale | 1,822 0 0 |
| Grover | 1,794 0 0 |
| Brass | 1,612 0 0 |
| Perry | 1,555 0 0 |
| King | 1,530 0 0 |

Second Portion.

| | |
|---|---|
| King | £6,048 0 0 |

For enlarging White Hall, Hornsey-lane, for Mr. G. Wills. Messrs. Lander & Bedells, architects:—

First Portion.

| | |
|---|---|
| Axford | £395 0 0 |
| Ebbage | 391 0 0 |
| Williams & Son | 353 0 0 |

Second Portion.

| | |
|---|---|
| Axford | £3,850 0 0 |
| Brass | 3,817 0 0 |
| Newman & Mann | 3,735 0 0 |
| Dove, Brothers | 3,675 0 0 |
| Williams & Son | 3,617 0 0 |

For "The Beechwood," Newport, Monmouth, for Mr. George Fothergill. External walls, mouldings, &c., finished with Portland cement, or with Bath-stone ashlar and dressings for two principal fronts. Messrs. Habershon, Pite, & Fawckner, architects. Quantities by the architects:—

| | Portland Cement. | Bath-stone Ashlar. |
|---|---|---|
| Biggs | £8,012 | £9,181 |
| Burkett | 7,820 | — |
| Jones | 7,422 | 8,061 |
| Thomas | 7,117 | 8,172 |
| Baker & Son | 7,082 | 8,043 |
| Stephen & Bastow | 6,999 | 7,977 |
| Fox | 6,720 | 7,000 |
| Linton | 6,608 | 7,421 |
| Miles | 6,400 | 7,294 |
| Richards | 6,245 | 7,070 |

For the erection of St. Mary's Church, Brighton, (excepting tower). Mr. William Emerson, architect. Quantities by Mr. W. Allen Dixon:—

| | |
|---|---|
| Booth | £15,000 0 0 |
| Chappell | 14,300 0 0 |
| Dove, Brothers | 13,995 0 0 |
| Killby | 12,871 0 0 |
| Colls & Sons (accepted) | 12,575 0 0 |

For new steam corn-mill, granary, boiler-house, chimney-shaft, &c. for the Appley Bridge and West Lancashire Corn-mill Co. (Limited), Appley Bridge, near Wigan. Mr. John Dence, architect. Quantities by Messrs. Taylor, Son, & Jackson:—

| | |
|---|---|
| Fairbridge & Hatch | £13,129 6 0 |
| Holden | 12,008 0 0 |
| Daxfield (withdrawn) | 11,720 0 0 |
| Hutchinson | 11,600 0 0 |
| Preston | 11,370 0 0 |
| Bridge (accepted) | 11,000 0 0 |
| Cheetham | 10,939 0 0 |
| Morland & Co. | 9,650 0 0 |

For two cottages at Frilford, Berks. Mr. Edwin Dolby, architect:—

| | |
|---|---|
| Wyatt & Son | £596 10 0 |
| Drew | 439 18 0 |
| Wheeler & Robins | 423 13 0 |
| Walter | 390 0 0 |
| Aldworth | 366 12 0 |
| Wheeler & Hulcup (accepted) | 356 16 0 |

For two houses and shops at Lynton, North Devon. Mr. Edwin Dolby, architect:—

| | |
|---|---|
| Burgess & Goss | £1,218 10 0 |
| Pearse | 1,200 0 0 |
| Harrison | 1,030 0 0 |
| Bowden & Sons | 810 0 0 |

For a new church in the parish of St. Paul's, Lincoln. Mr. A. W. Blomfield, architect. Quantities supplied by Messrs. Widnell & Trollope:—

| | |
|---|---|
| Barnes & Wright | £3,748 0 0 |
| Martin & Sims | 3,718 0 0 |
| Otter & Elsey | 3,640 0 0 |
| Cloee | 3,565 0 0 |
| Huddlestone & Son | 3,553 0 0 |
| Young | 3,425 0 0 |
| Chambers | 3,386 0 0 |
| Binns (accepted) | 3,333 0 0 |

For a foreman's house, Welton Cliff, Lincoln, proprietor finding all bricks, stone, sand, and headings. Mr. W. Thompson, architect. Quantities not supplied:—

| | |
|---|---|
| Martin & Sims (accepted) | £475 0 0 |

For villa residence and stabling at Hove, Brighton, for Mr. J. O. Vallance. Mr. Thomas Lainson, architect. Quantities by Messrs. Fowler & Hughman:—

| | |
|---|---|
| Moreland & Co. | £8,886 0 0 |
| Merritt & Ashby | 8,396 0 0 |
| Cheesman & Co. | 8,243 0 0 |
| Dove, Brothers | 8,157 0 0 |
| Chappell | 7,988 0 0 |
| Nash & Co. | 7,497 0 0 |
| Lockyer | 7,292 0 0 |
| Barnes | 7,118 0 0 |
| Howard | 6,780 0 0 |

For alterations to No. 173, North-street, Brighton, for the Hampshire Banking Company. Mr. Thomas Lainson, architect:—

| | |
|---|---|
| Colwell | £999 0 0 |
| Reynolds | 875 0 0 |
| Lockyer | 832 0 0 |
| Newnham | 787 8 0 |
| Reynolds, jun. | 748 11 0 |
| Barnes | 732 0 0 |

For the partial restoration and reseating of Rodmersham Church, Kent. Messrs. Morris & Stallwood, architects:—

| | |
|---|---|
| Geere | £1,895 0 0 |
| Jopling | 1,732 9 10 |
| Bridge | 1,715 0 0 |
| Butler | 1,576 11 0 |
| Naylar | 1,563 0 0 |
| Martin | 1,446 15 4 |
| Avard | 1,428 0 0 |
| Cornelius | 1,421 0 0 |
| Beaumont | 1,209 13 9 |
| Whiting | 1,192 0 0 |
| Shrubsole (accepted) | 1,139 0 0 |

In the list of tenders for a work under Mr. R. L. Roumieu in last week's *Builder*, the lowest was one from Mr. Macey, which, by permission of Messrs. Petty, Wood, & Co., has been withdrawn by him. The next lowest in amount, that sent in by Mr. G. S. Pritchard, amounting to 23,290*l.*, has been accepted, and the works will be commenced forthwith.

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We are compelled to decline pointing out books and giving addresses.

All statements of facts, lists of tenders, &c. must be accompanied by the name and address of the sender, not necessarily for publication.

NOTE.—The responsibility of signed articles, and papers read at public meetings, rests, of course, with the authors.

*With the next Number will be given, as a Supplement, an INDEX and Title-page for the Volume of last year. A COLOURED TITLE-PAGE can be had, Gratis, on personal application.*

*The THIRTY-FOURTH VOLUME of "THE BUILDER" (bound), for the year 1876, will shortly be published, price One Guinea.*

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**RANDELL, SAUNDERS, & CO. (Limited),**
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**Patent Selenitic Cement,** with double the usual sand, is much stronger than ordinary mortar. Plastering finished in much less time at less cost. Excellent substitute for Portland cement for Concrete at less than half its price.—1, Great College-street, S.W. [ADVT.]

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